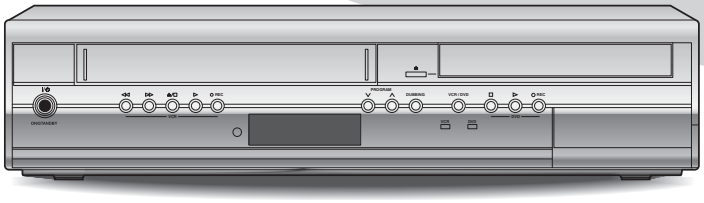
TOSHIBA

FILE NO. 810-200742GR

SERVICE MANUAL

DVD Video Recorder /Video Cassette Recorder

D-VR50KF
D-VR51KF



The above models are classified as green products (*1), as indicated by the underlined serial numbers. This Service Manual describes replacement parts for the green products. When repairing these green product(s), use the part(s) described in this manual and lead-free solder (*2).

For (*1) and (*2), see the next page.

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Published in Japan, May 2007 GREEN

(*1) GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing the restricted substances.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts.

Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2) LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104°F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or BOARD being soldered. Great care should be made to ensure high-quality soldering when servicing this product — especially when soldering large components, through-hole pins, and on BOARDs — as the level of heat required to melt lead-free solder is high.

MAIN SECTION

DVD VIDEO RECORDER & VIDEO CASSETTE RECORDER

D-VR50KF/D-VR51KF

Main Section
- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **BOARD's**
- **Exploded Views**
- **Parts List**

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SPECIFICATIONS

General

■ System
DVD-Video, DVD-RW/R, DVD+RW/R, CD-DA, CD-RW/R, Video Cassette Tape

■ VCR Video Heads
Four heads

■ Power requirements
220–240V ~ ± 10%, 50Hz ± 0.5%

■ Power consumption
35W (standby: 5.0W)

■ Weight
4.3kg

■ Dimensions (width x height x depth)
435 x 99.5 x 260mm

■ Operating temperature
5ºC to 40ºC

■ Operating humidity
Less than 80% (no condensation)

■ TV format
SECAM LL', B / G , D / K , PAL B / G

Recording

■ Recording format
Video Recording (VR)format (DVD-RW only),
Video format (DVD-RW, DVD-R)
+VR format (DVD+RW, DVD+R)

■ Recordable discs
DVD-Rewritable, DVD-Recordable
DVD+Rewritable, DVD+Recordable

■ Video recording format
Sampling frequency : 13.5MHz
Compression format : MPEG

■ Audio recording format
Sampling frequency : 48kHz
Compression format : Dolby Digital

Tuner

■ Receivable channels
"L(SECAM L)" F1 - E69
"BG(PAL B / G)" E2 - E69

Input/Output

Front Panel : (AV3)

■ Video input
One RCA connector
Input level : 1Vp-p (75 Ω)

■ S-Video input
One Mini DIN 4-pin jack
Input level : Y (luminance) 1Vp-p (75 Ω)
C (colour) 300mVp-p (75 Ω)

■ Audio input
Two RCA connectors
Input level : 2Vrms (Input impedance: more than 10kΩ)

Rear Panel :

■ VHF/UHF antenna input/output terminal
VHF/UHF set 75 Ω

■ Audio input /output
Two 21-pin scart jack (AV1, AV2)

■ Video input /output
Two 21-pin scart jack (AV1, AV2)
Input /output level : 1Vp-p (75Ω) each

■ S-Video output
One Mini DIN 4-pin jacks
Input /output level :
Y (luminance) 1Vp-p (75 Ω)
C (colour) 300mVp-p (75 Ω)

■ Component video output
Three RCA connectors
Output level : Y: 1.0Vp-p (75 Ω)
P_B/C_B, P_R/C_R: 0.7Vp-p (75Ω) each

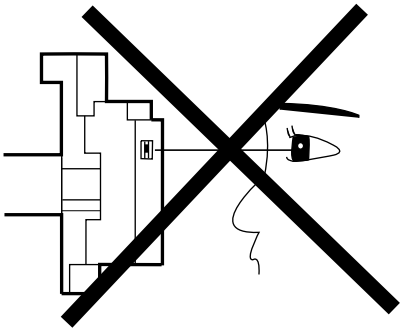
■ Audio output
Two RCA connectors
Output level : 2Vrms (Output impedance: 680Ω)

■ Digital audio output
One Coaxial pin jack
Output level : 500mVp-p (75 Ω)

Note
The specifications and design of this product are subject to change without notice.

LASER BEAM SAFETY PRECAUTIONS

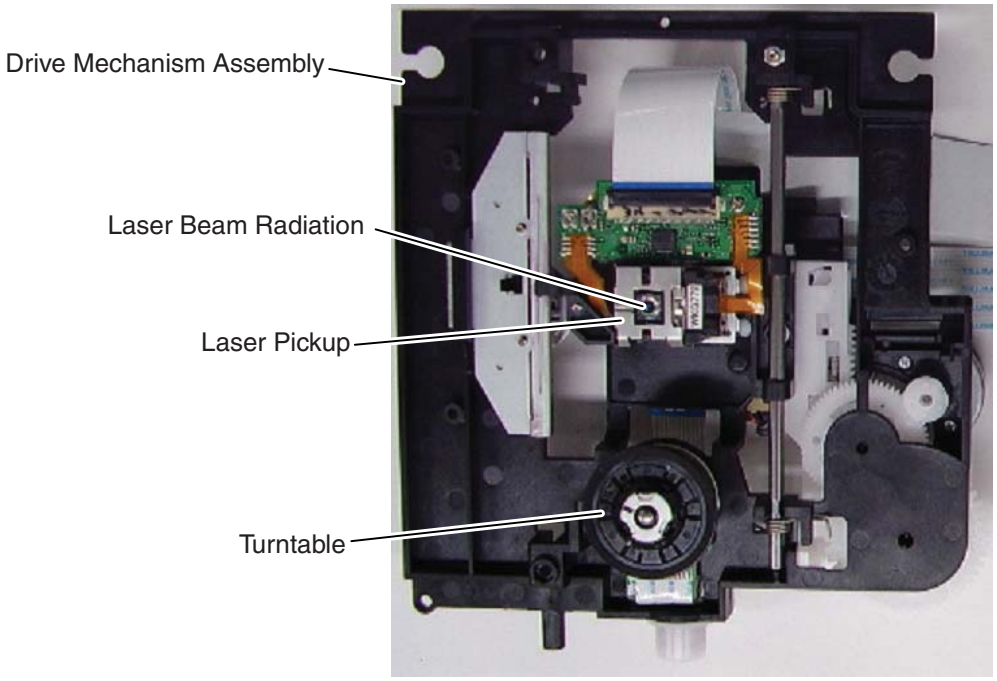
This DVD player uses a pickup that emits a laser beam.

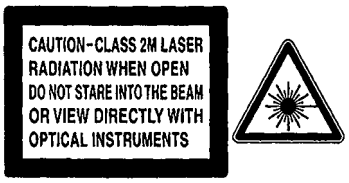


Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.





Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1)Wires covered with PVC tubing

2)Double insulated wires

3)High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1)Insulation tape

2)PVC tubing

3)Spacers

4)Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
220 to 240 V	≥ 3 mm(d) ≥ 6 mm(d')

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

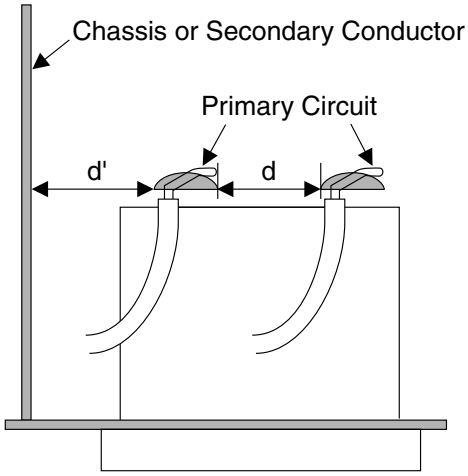


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

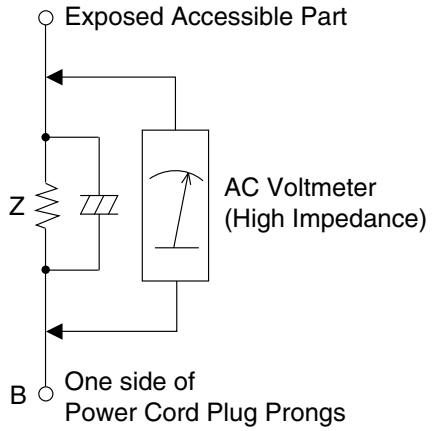


Fig. 2

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Load Z	Leakage Current (i)	One side of power cord plug prongs (B) to:
220 to 240 V	2kΩ RES. Connected in parallel	i≤0.7mA AC Peak i≤2mA DC	RF or Antenna terminals
	50kΩ RES. Connected in parallel	i≤0.7mA AC Peak i≤2mA DC	A/V Input, Output

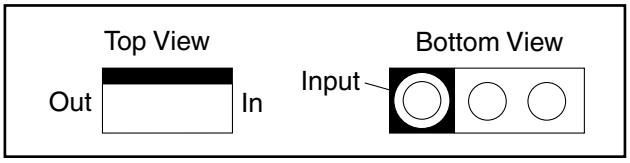
Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

STANDARD NOTES FOR SERVICING

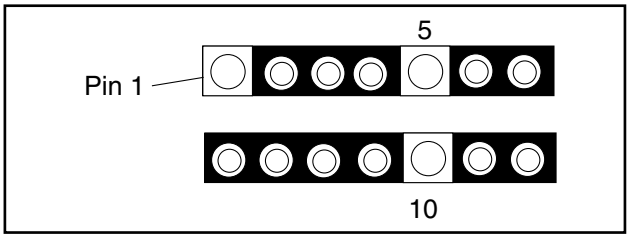
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Circuit Board Indications

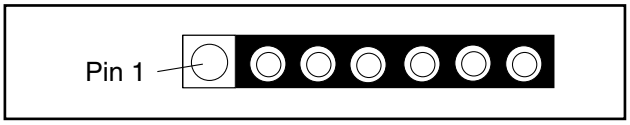
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

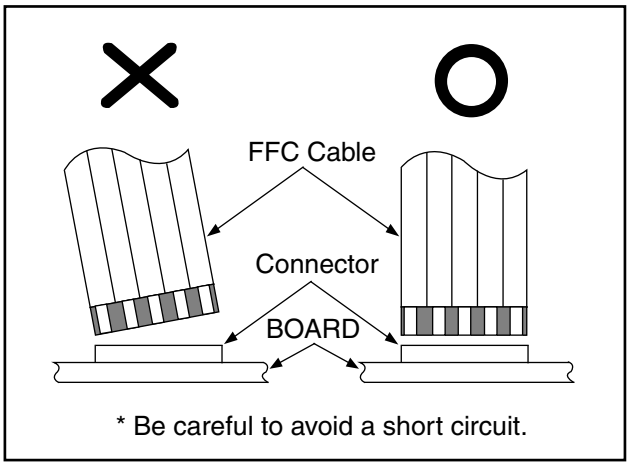


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

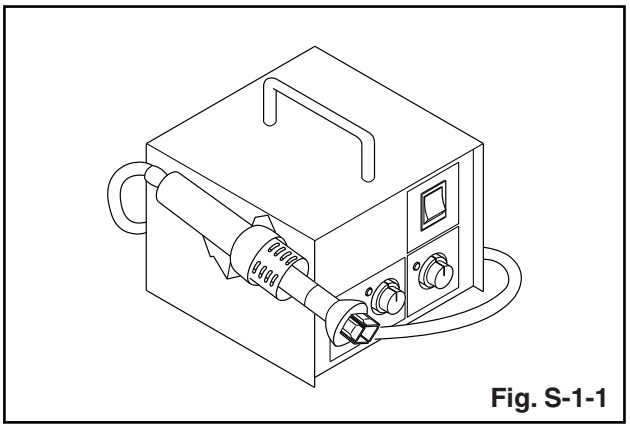


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the BOARD is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

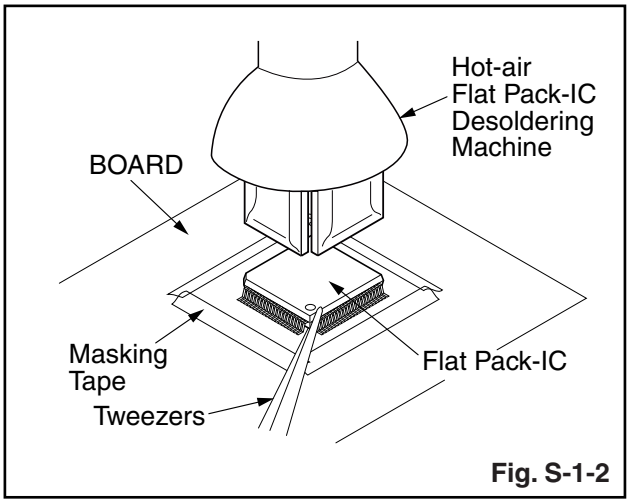


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

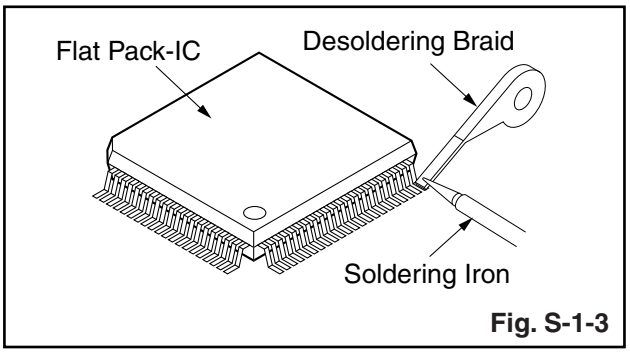


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

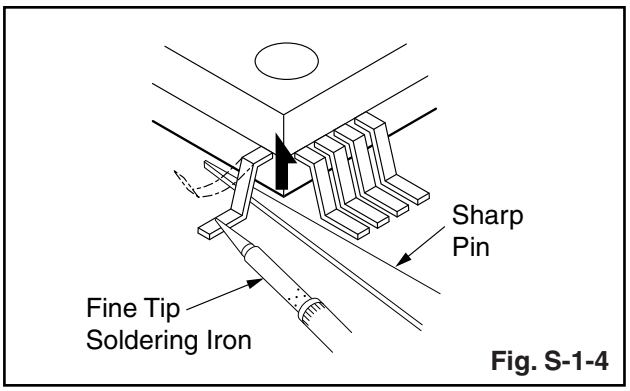


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the BOARD contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the BOARD; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the BOARD using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the BOARD, handle it gently because it may be damaged if force is applied.

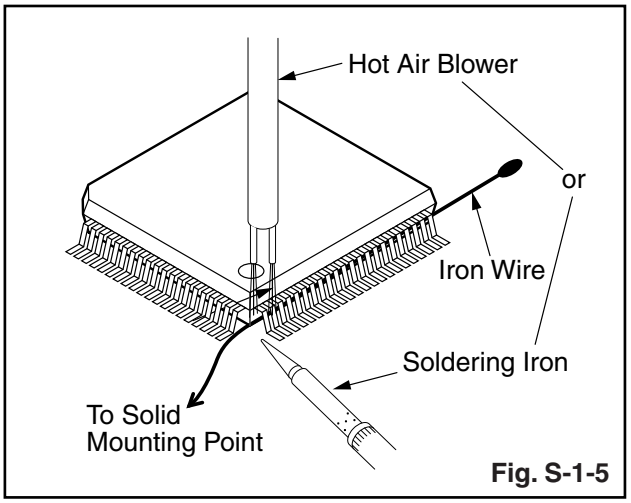


Fig. S-1-5

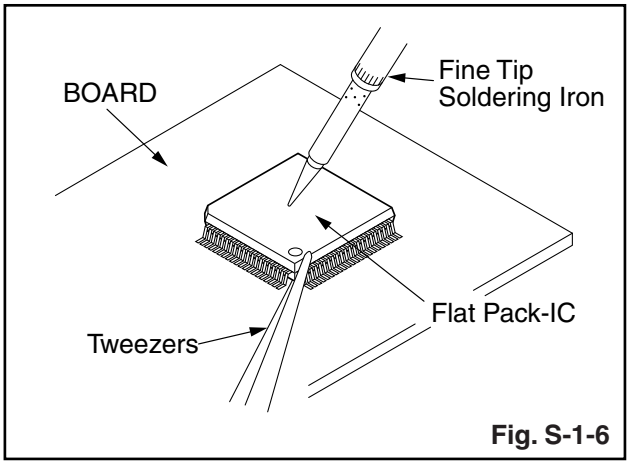


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the BOARD so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the BOARD when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

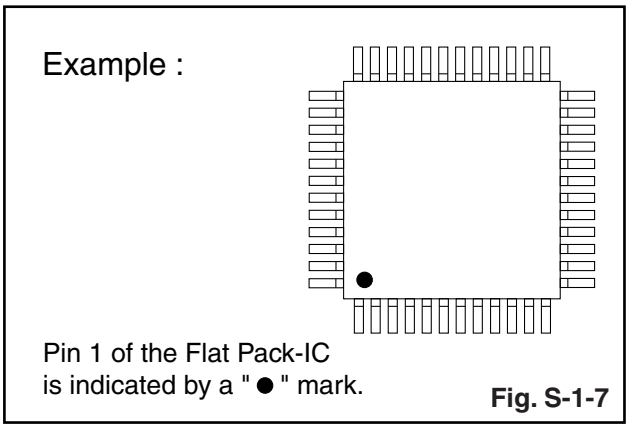


Fig. S-1-7

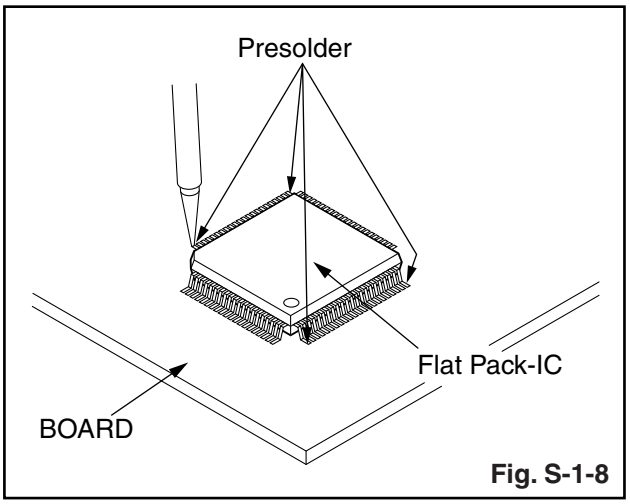


Fig. S-1-8

Instructions for Handling Semi-conductors

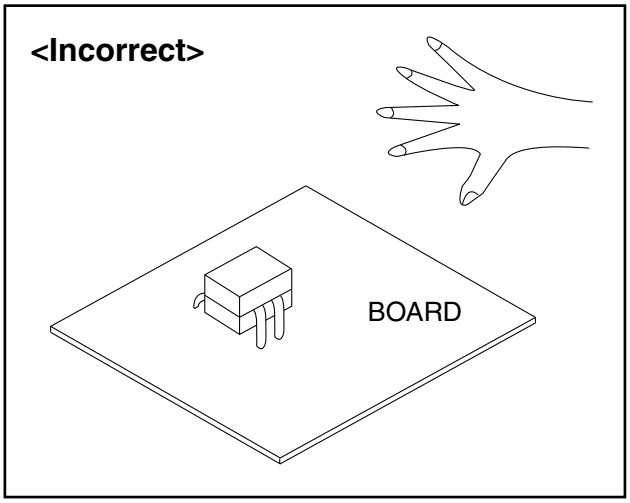
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

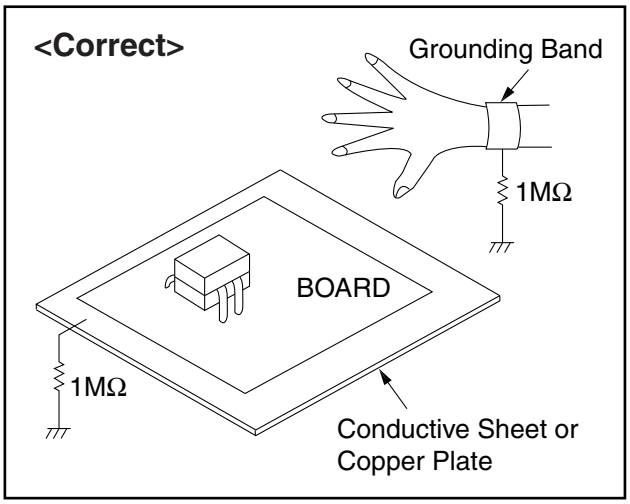
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the [▷] (VCR) button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP501 (S-INH) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

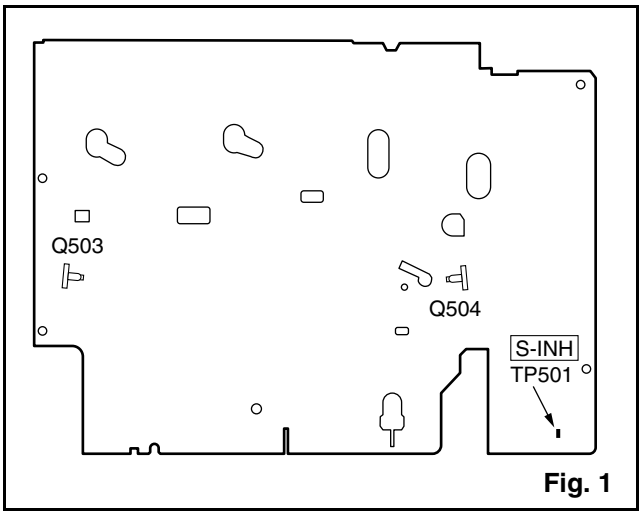


Fig. 1

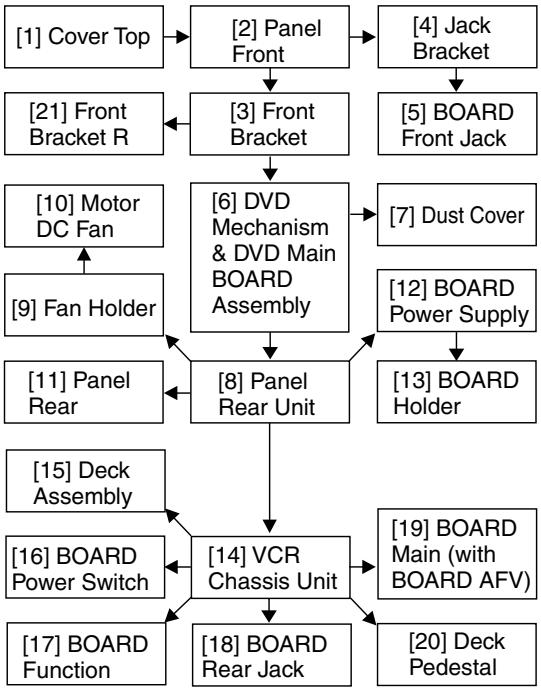
Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

CABINET DISASSEMBLY INSTRUCTIONS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Cover Top	D1	7(S-1)	---
[2]	Panel Front	D2	*5(L-1), *3(L-2), *CN1505	1 1-1 1-2 1-3
[3]	Front Bracket	D2	2(S-2), 2(S-3)	---
[4]	Jack Bracket	D3	2(S-4)	---
[5]	BOARD Front Jack	D3	Jack Plate Earth	---
[6]	DVD Mechanism & DVD Main BOARD Assembly	D4	4(S-5), *CN101, *CN701	---
[7]	Dust Cover	D4	----------	---
[8]	Panel Rear Unit	D5	3(S-6A), 2(S-6B), 3(S-7), (S-8),*CN1503	---
[9]	Fan Holder	D6	3(S-9)	---
[10]	Motor DC Fan	D6	----------	---
[11]	Panel Rear	D6	----------	---
[12]	BOARD Power Supply	D7	4(S-10), *CN1504	---
[13]	BOARD Holder	D7	4(S-11)	---
[14]	VCR Chassis Unit	D8	5(S-12), (S-13A), (S-13B), (S-13C), 3(S-14), (S-15), (S-16), PCB Washer	---
[15]	Deck Assembly	D9	(S-17), (S-18), Desolder	2 3
[16]	BOARD Power Switch	D9	Desolder	---
[17]	BOARD Function	D9	Desolder	---
[18]	BOARD Rear Jack	D9	Desolder, Plate Earth	---
[19]	BOARD Main (with BOARD AFV)	D9	----------	---
[20]	Deck Pedestal	D10	7(S-19)	---
[21]	Front Bracket R	D10	(S-20)	---
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

Note:

(1): Identification (location) No. of parts in the figures

(2): Name of the part

(3): Figure Number for reference

(4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, L=Locking Tab, S=Screw,
CN=Connector
*=Unhook, Unlock, Release, Unplug, or Desolder
e.g. 6(S-1) = six Screws (S-1),
5(L-1) = five Locking Tabs (L-1)

(5): Refer to “Reference Notes.”

Reference Notes

CAUTION 1: Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

1-1. Release five Locking Tabs (L-1).
1-2. Release three Locking Tabs (L-2)
1-3. Disconnect Connector (CN1505), and remove the Panel Front.
2. When reassembling, solder wire jumpers as shown in Fig. D9.
3. Before installing the Deck Assembly, be sure to place the pin of LD-SW on BOARD Main as shown in Fig. D9. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D9.

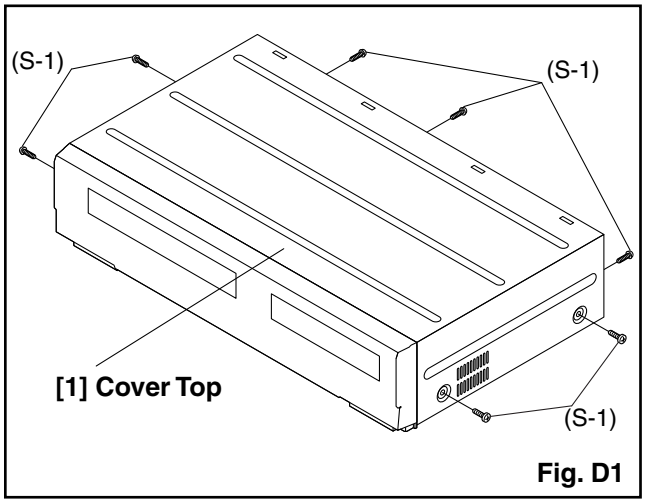


Fig. D1

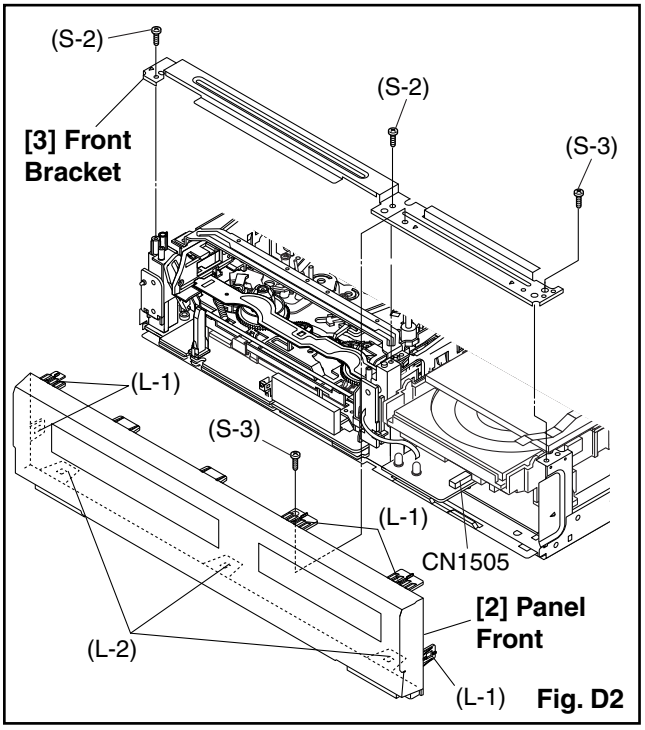


Fig. D2

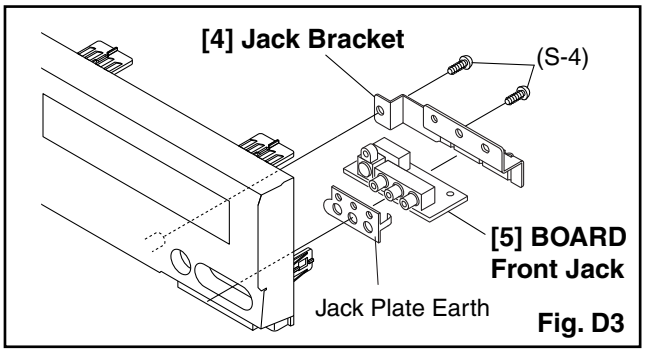


Fig. D3

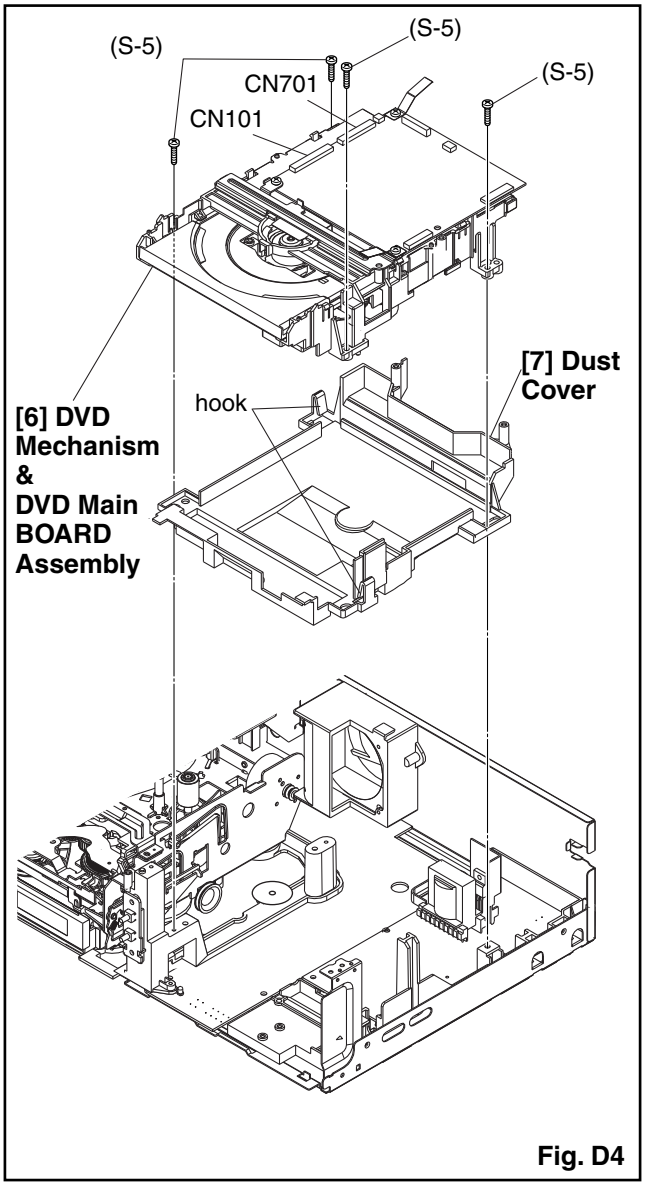


Fig. D4

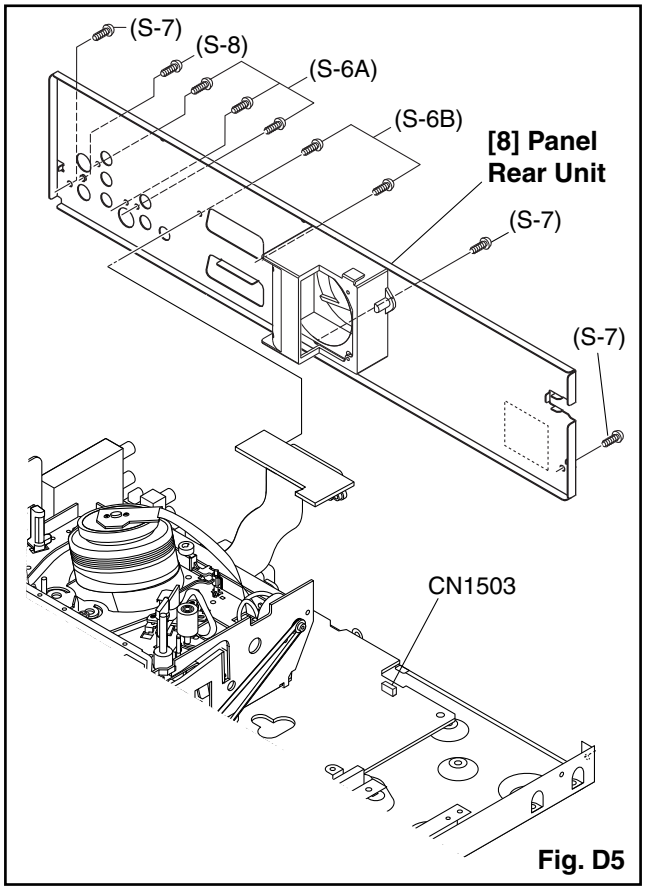


Fig. D5

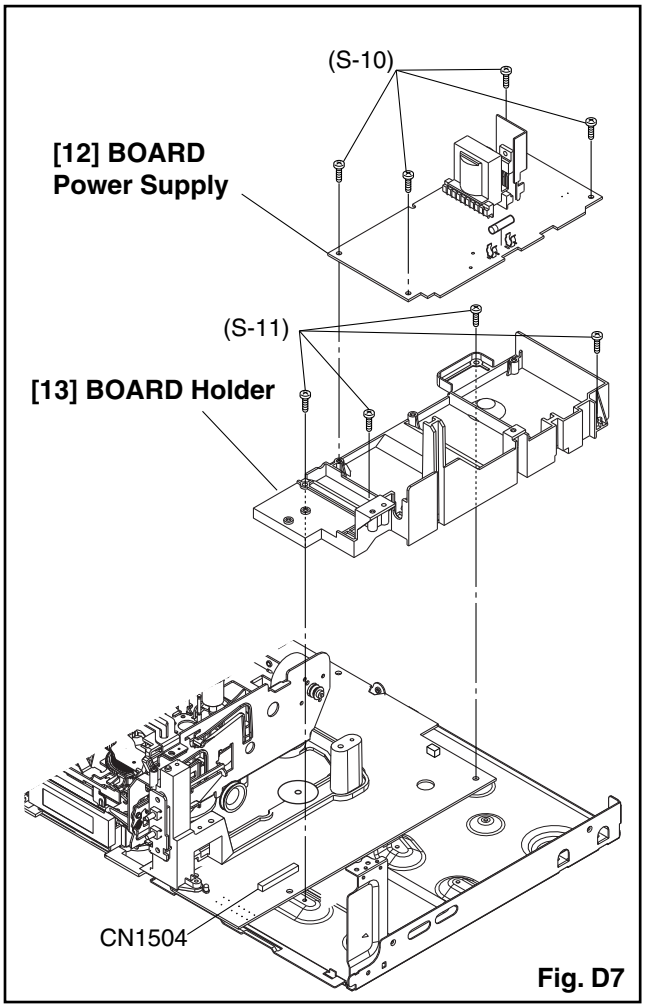


Fig. D7

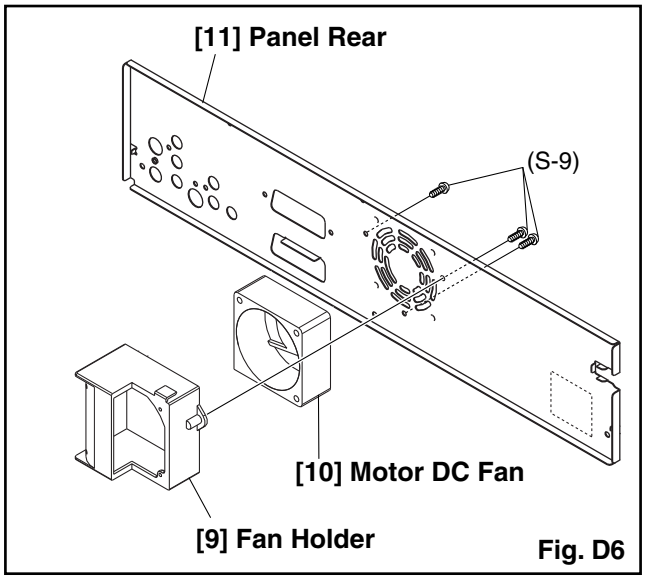


Fig. D6

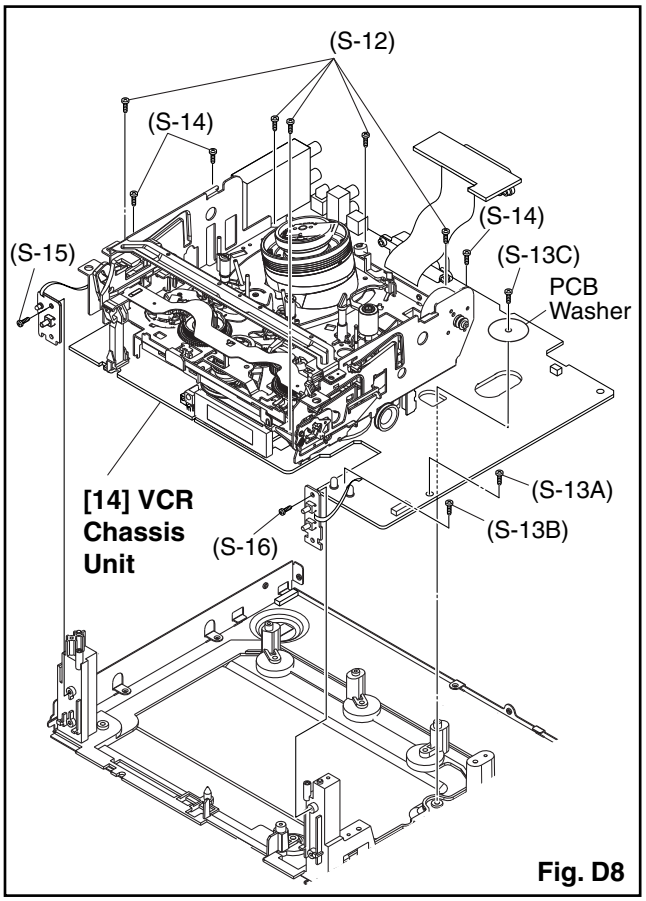
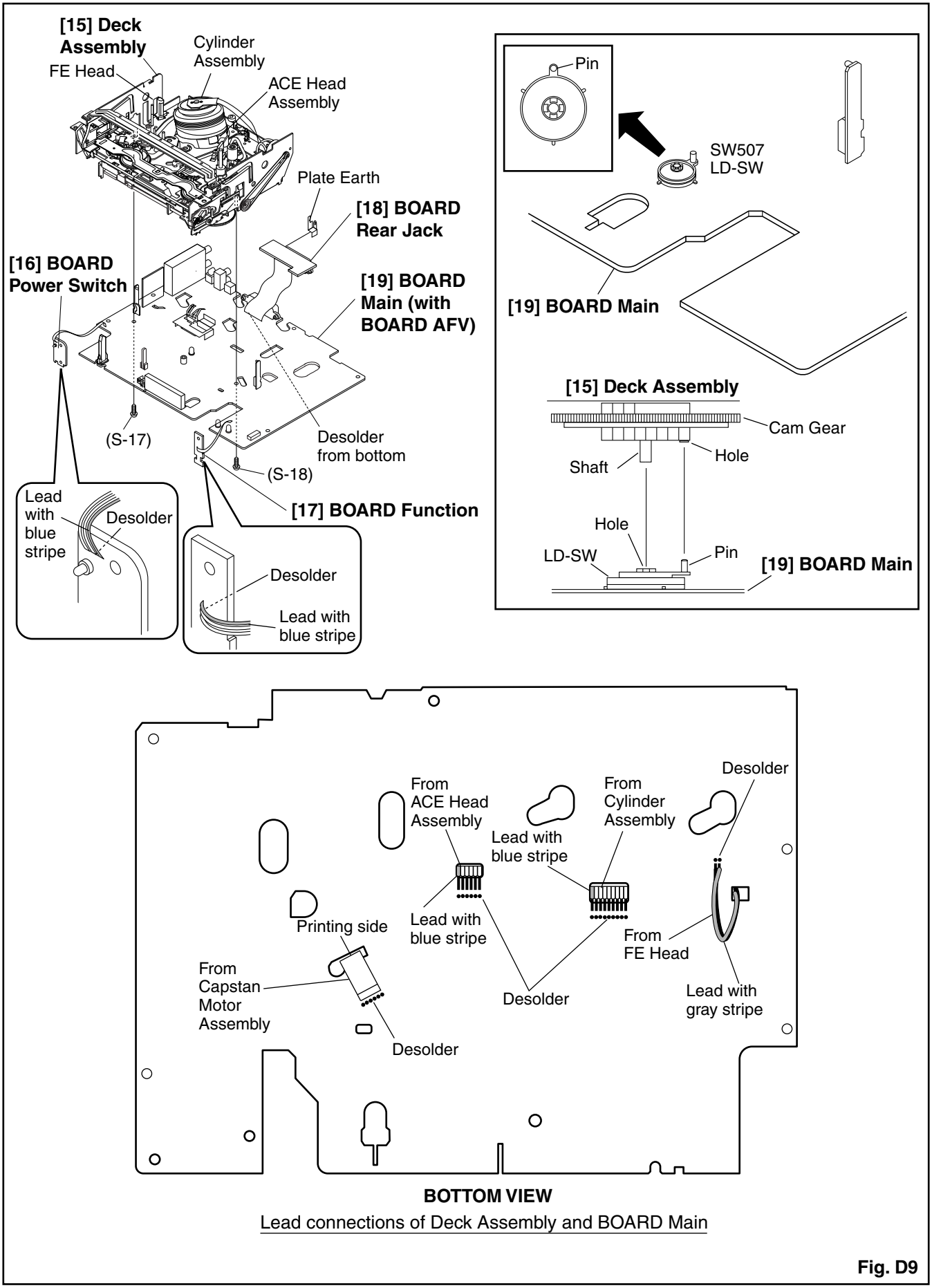


Fig. D8



BOTTOM VIEW

Lead connections of Deck Assembly and BOARD Main

Fig. D9

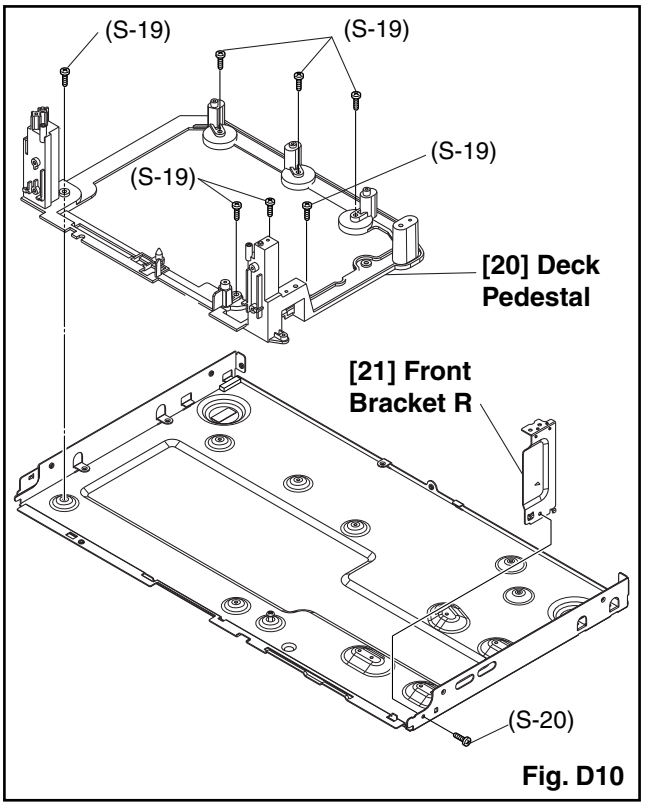
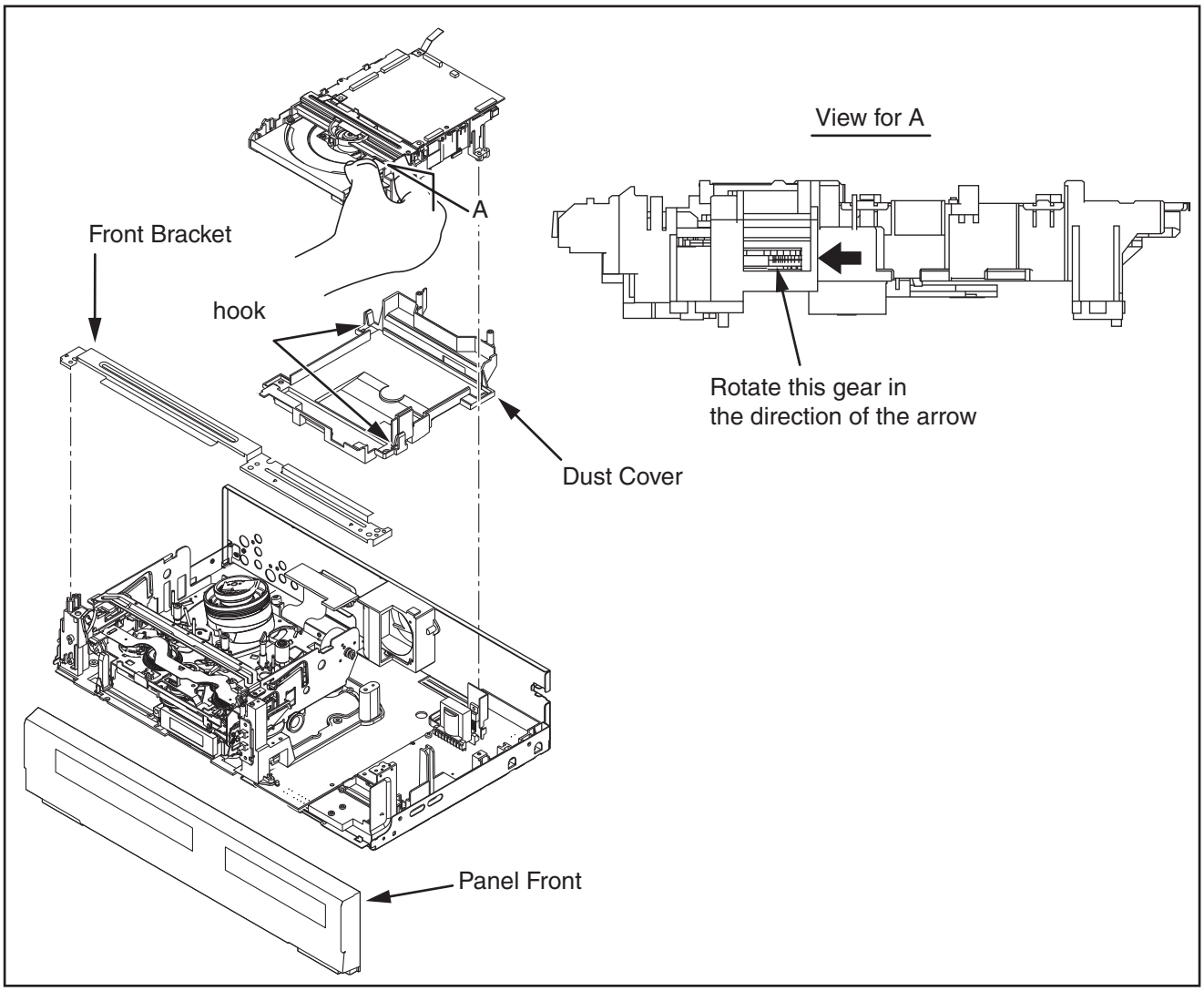


Fig. D10

3. How to Eject Manually

Note: When rotating the gear, be careful not to damage the gear.

1. Remove the Cover Top.
2. Remove the Panel Front.
3. Remove the Front Bracket.
4. Remove the DVD Mechanism & DVD Main BOARD Assembly.
5. Unhook two places and detach the Dust Cover.
6. Rotate the gear in the direction of the arrow manually as shown below until the tray descends.
7. Pull the tray out manually and remove a disc.



ELECTRICAL ADJUSTMENT INSTRUCTIONS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either [PROGRAM ∨] or [PROGRAM ∧] button on the front panel first, then the [▷] (VCR) button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div.,
   F-Range: DC~AC-20MHz
2. Alignment Tape (FL6A)

Head Switching Position Adjustment

Purpose:

To determine the Head Switching position during playback.

Symptom of Misadjustment:

May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj.Point	Mode	Input
J236(JK1-V-OUT) TP504(RF-SW) GND	VR501 (Switching Point) (BOARD MAIN)	PLAY (SP)	-----
Tape	**Measurement Equipment**	**Spec.**	
FL6A	Oscilloscope	6.5H±1H (416μs±64μs)	
Connections of Measurement Equipment			

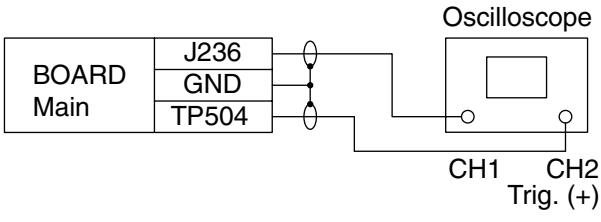
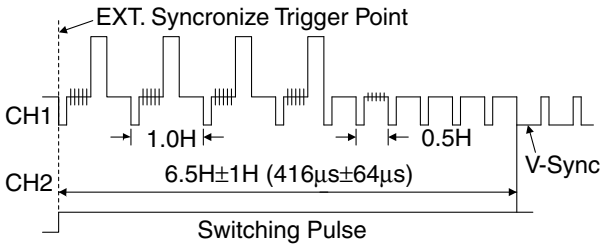


Figure 1



Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H±1H (416μs±64μs) delayed position from the rising edge of the CH2 head switching pulse waveform.

HOW TO INITIALIZE THE DVD RECORDER & VCR

To put the program back at the factory-default, initialize the DVD recorder & VCR as the following procedure.

< DVD Section >

1. Turn the DVD recorder on.
2. Confirm that no disc is loaded or that the disc tray is open. To put the DVD recorder into the Version display mode, press [DVD], [INSTANT SKIP], [1], [2], and [3] buttons on the remote control in that order.
   Fig. a appears on the screen.

*1: "*******" differs depending on the models.
*2: Firmware Version differs depending on the models, and this indication is one example.

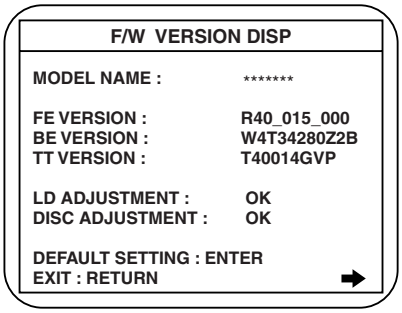


Fig. a Version Display Mode Screen

3. Press [ENTER] button, then the DVD recorder starts initializing. When the initializing is completed, the DVD recorder exits the Version display mode and turns off the power automatically.
   * To move into the Normal mode from the Version display mode, press [RETURN] button on the remote control instead of [ENTER] button.
   * When [I/⏻] button is pressed before [ENTER] button is pressed, the DVD recorder exits the Version display mode, then the power turns off.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD recorder into version up mode, press [INSTANT SKIP], [6], [5], and [4] buttons on the remote control unit in the order. Then the tray will open automatically.
   Fig. a appears on the screen and Fig. b appears on the VFD.

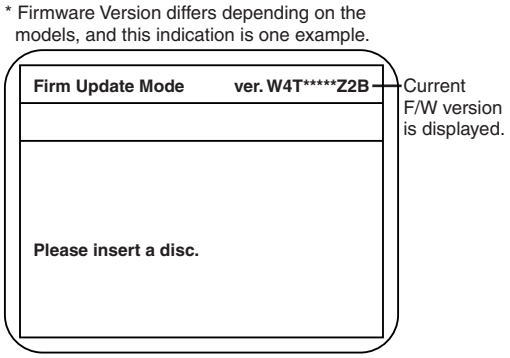

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode
ver. W4T*****Z2B
Current F/W version is displayed.
Please insert a disc.

Fig. a Version Up Mode Screen

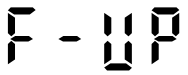


Fig. b VFD in Version Up Mode

3. Load the disc for version up.
   Fig. c appears on the screen. The file on the top is highlighted as the default.
   When there is only one file to exist, Step 4 will start automatically.

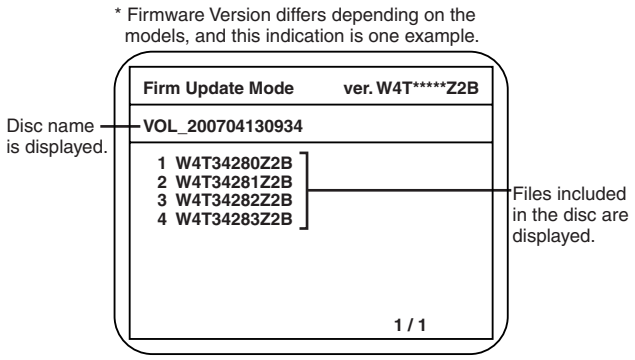


Fig. c Update Disc Screen

4. Select the firmware version pressing arrow buttons, then press [ENTER].
   Fig. d appears on the screen and Fig. e appears on the VFD. The DVD recorder starts updating.

   About VFD indication of Fig. e:

   1) When Fig. d is displayed on the screen, “F-UP” is displayed on the VFD.
   2) When “Firmware Updating... XX% Complete.” is displayed on the screen, “34280” is displayed on the VFD.

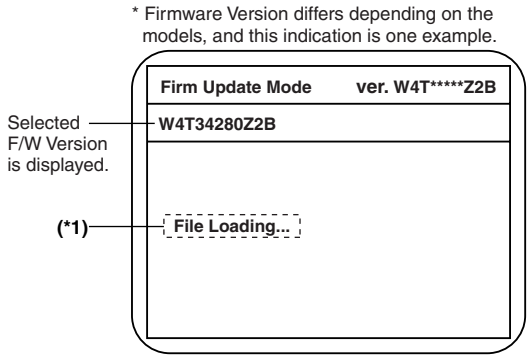

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode
ver. W4T*****Z2B
Selected F/W Version is displayed.
W4T34280Z2B
(*1)
File Loading...

Fig. d Programming Mode Screen

Fig. e VFD in Programming Mode (Example)

The appearance shown in (*1) of Fig. d is described as follows.

No.	Appearance	State
1	File Loading...	Sending files into the memory
2	Firmware Updating... XX% Complete.	Writing new version data
---	Firmware Update Failure	Failed in updating

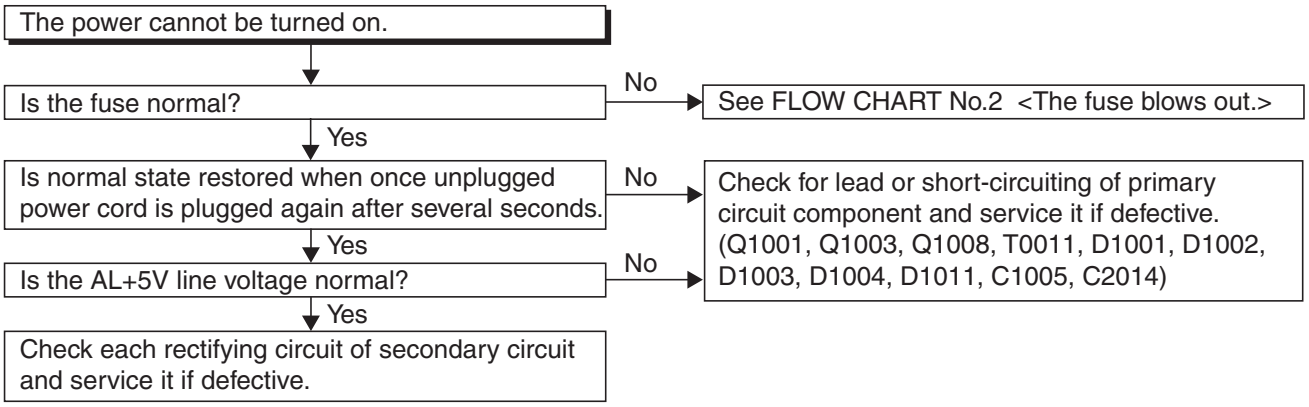
5. After updating is finished, the tray opens automatically.
   At this time, no button is available.
6. Pull out the AC code once, then insert it again.

TROUBLESHOOTING

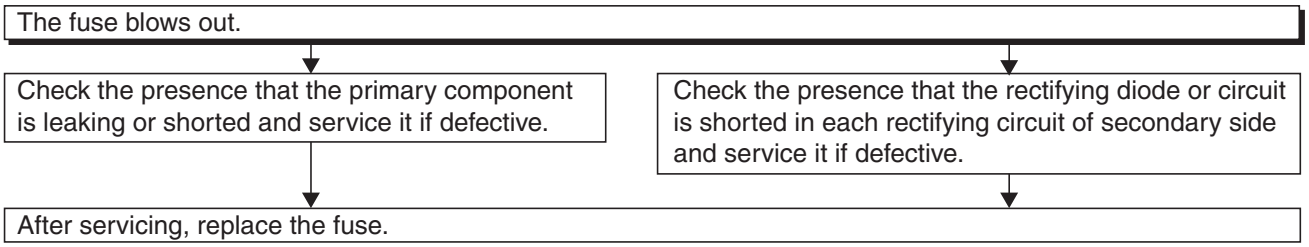
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

1 Power Supply Section

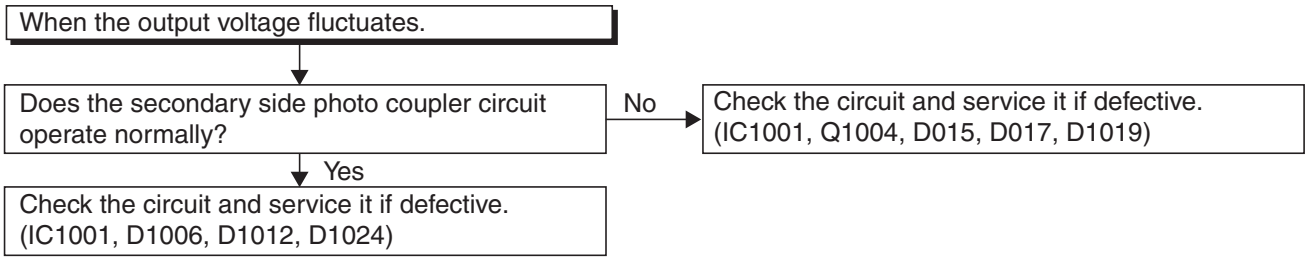
FLOW CHART NO.1


The power cannot be turned on.
Is the fuse normal?
No
See FLOW CHART No.2 <The fuse blows out.>
Yes
Is normal state restored when once unplugged power cord is plugged again after several seconds.
No
Check for lead or short-circuiting of primary circuit component and service it if defective. (Q1001, Q1003, Q1008, T0011, D1001, D1002, D1003, D1004, D1011, C1005, C2014)
Yes
Is the AL+5V line voltage normal?
No
Yes
Check each rectifying circuit of secondary circuit and service it if defective.

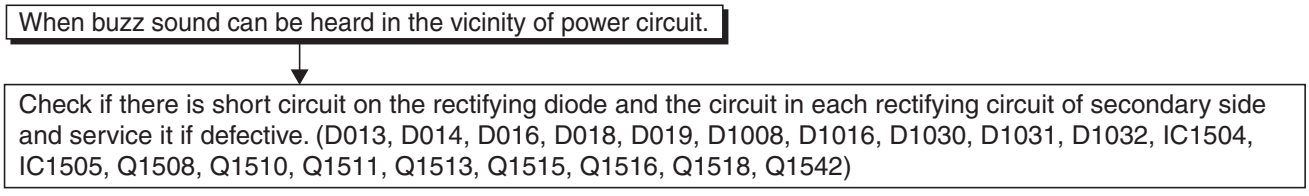
FLOW CHART NO.2


The fuse blows out.
Check the presence that the primary component is leaking or shorted and service it if defective.
Check the presence that the rectifying diode or circuit is shorted in each rectifying circuit of secondary side and service it if defective.
After servicing, replace the fuse.

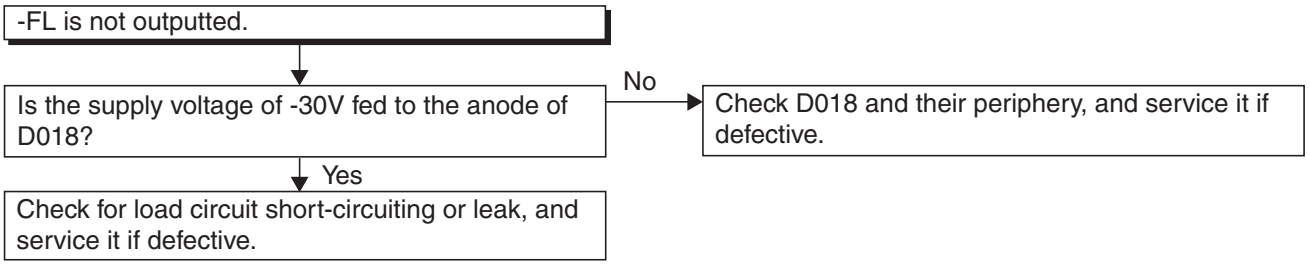
FLOW CHART NO.3


When the output voltage fluctuates.
Does the secondary side photo coupler circuit operate normally?
No
Check the circuit and service it if defective. (IC1001, Q1004, D015, D017, D1019)
Yes
Check the circuit and service it if defective. (IC1001, D1006, D1012, D1024)

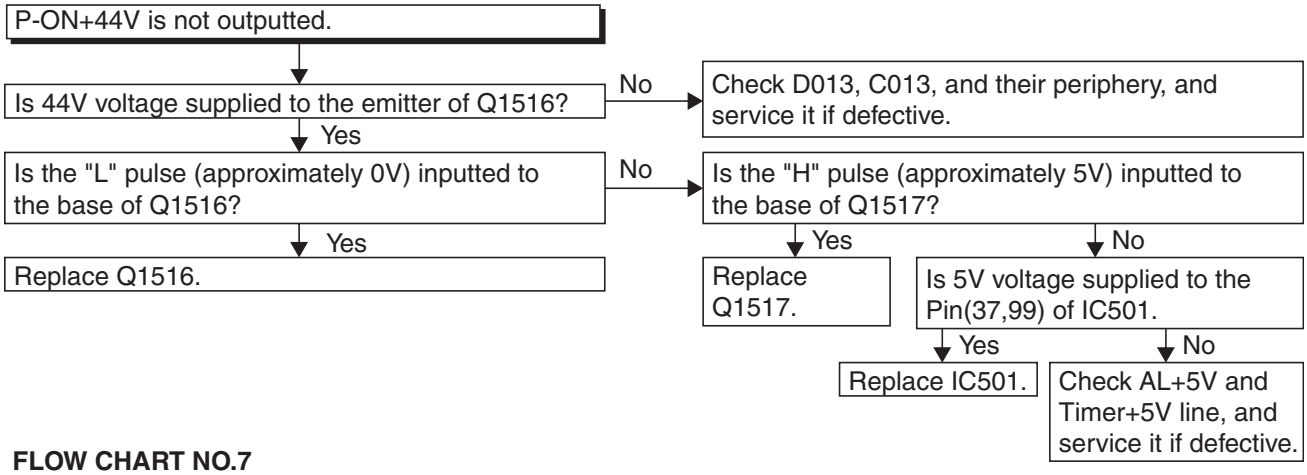
FLOW CHART NO.4


When buzz sound can be heard in the vicinity of power circuit.
Check if there is short circuit on the rectifying diode and the circuit in each rectifying circuit of secondary side and service it if defective. (D013, D014, D016, D018, D019, D1008, D1016, D1030, D1031, D1032, IC1504, IC1505, Q1508, Q1510, Q1511, Q1513, Q1515, Q1516, Q1518, Q1542)

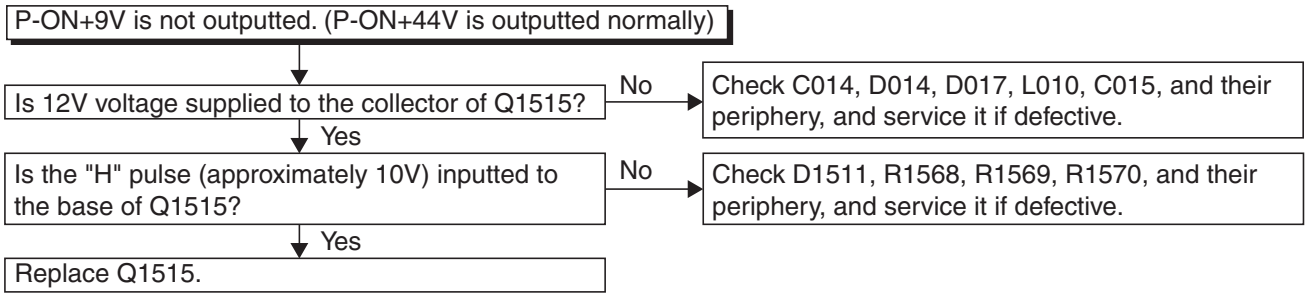
FLOW CHART NO.5


-FL is not outputted.
Is the supply voltage of -30V fed to the anode of D018?
No
Check D018 and their periphery, and service it if defective.
Yes
Check for load circuit short-circuiting or leak, and service it if defective.

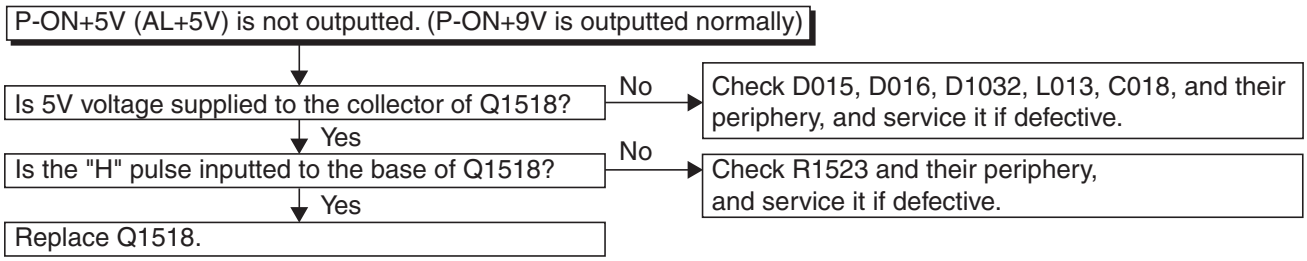
FLOW CHART NO.6


P-ON+44V is not outputted.
Is 44V voltage supplied to the emitter of Q1516?
No
Check D013, C013, and their periphery, and service it if defective.
Yes
Is the "L" pulse (approximately 0V) inputted to the base of Q1516?
No
Is the "H" pulse (approximately 5V) inputted to the base of Q1517?
Yes
Replace Q1516.
Yes
Replace Q1517.
No
Is 5V voltage supplied to the Pin(37,99) of IC501.
Yes
Replace IC501.
No
Check AL+5V and Timer+5V line, and service it if defective.

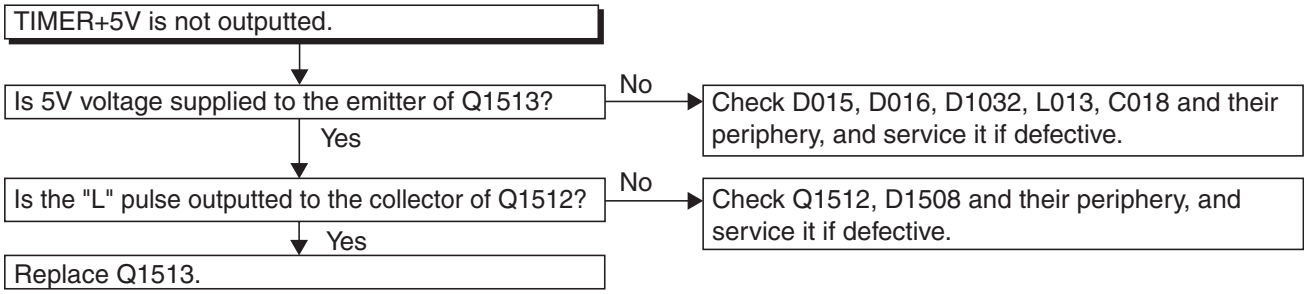
FLOW CHART NO.7


P-ON+9V is not outputted. (P-ON+44V is outputted normally)
Is 12V voltage supplied to the collector of Q1515?
No
Check C014, D014, D017, L010, C015, and their periphery, and service it if defective.
Yes
Is the "H" pulse (approximately 10V) inputted to the base of Q1515?
No
Check D1511, R1568, R1569, R1570, and their periphery, and service it if defective.
Yes
Replace Q1515.

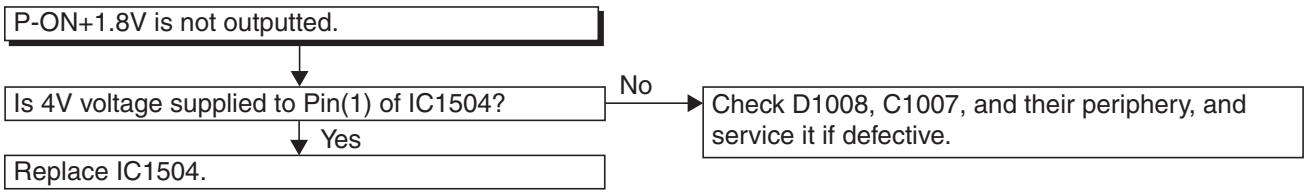
FLOW CHART NO.8


P-ON+5V (AL+5V) is not outputted. (P-ON+9V is outputted normally)
Is 5V voltage supplied to the collector of Q1518?
No
Check D015, D016, D1032, L013, C018, and their periphery, and service it if defective.
Yes
Is the "H" pulse inputted to the base of Q1518?
No
Check R1523 and their periphery, and service it if defective.
Yes
Replace Q1518.

FLOW CHART NO.9


TIMER+5V is not outputted.
Is 5V voltage supplied to the emitter of Q1513?
No
Check D015, D016, D1032, L013, C018 and their periphery, and service it if defective.
Yes
Is the "L" pulse outputted to the collector of Q1512?
No
Check Q1512, D1508 and their periphery, and service it if defective.
Yes
Replace Q1513.

FLOW CHART NO.10


P-ON+1.8V is not outputted.
Is 4V voltage supplied to Pin(1) of IC1504?
No
Check D1008, C1007, and their periphery, and service it if defective.
Yes
Replace IC1504.

FLOW CHART NO.11

DVD-P-ON+3.3V is not outputted.

↓

Is 5V voltage supplied to Pin(1) of IC1505? — No → Check D015, D016, D1032, L013, C018 and their periphery, and service it if defective.

↓ Yes

Replace IC1505.

FLOW CHART NO.12

DVD-P-ON+12V is not outputted.

↓

Is 12V voltage supplied to the emitter of Q1511? — No → Check D1031, L1013, C1037, C1039 and their periphery, and service it if defective.

↓ Yes

Is the "L" pulse outputted to the collector of Q1514? — No → Check Q1514 and PWR-SW line, and service it if defective.

↓ Yes

Replace Q1511.

FLOW CHART NO.13

DVD-P-ON+5V is not outputted. (AL+5V is outputted normally.)

↓

Is the "H" pulse inputted to the base of Q1510? — No → Check R1531, R1532 and their periphery, and service it if defective.

↓ Yes

Replace Q1510.

FLOW CHART NO.14

The fluorescent display tube does not light up.

↓

Is 5V voltage supplied to Pin(13, 43) of IC612? — No → Check the EV+5V line and service it if defective.

↓ Yes

Is approximately -24V to -28V voltage supplied to Pin(30) of IC612? — No → Check the -FL line and service it if defective.

↓ Yes

Is there approximately 500kHz oscillation to Pin(5) of IC612? — No → Check R618, IC612 and their periphery, and service it if defective.

↓ Yes

Are the filament voltage applied between Pin(1) and Pin(24) of the fluorescent display tube? Also negative voltage applied between these pins and GND? — No → Check the power circuit, D1016, D1017, R1040, R1041, C1018 and their periphery, and service it if defective.

↓ Yes

Replace the fluorescent display tube (FL601).

2 DVD Section

FLOW CHART NO.1

The key operation is not functioning.

↓

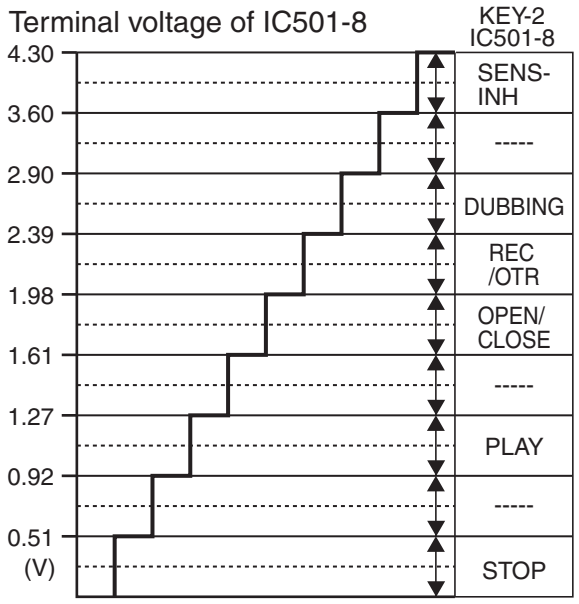
Are the contact point and the installation state of the key switches normal? — No → Re-install the key switches correctly or replace the poor switch.

↓ Yes

Is the control voltage normally inputted into Pin(8) of IC501? — No → Check the key switches and their periphery, and service it if defective.

↓ Yes

Replace IC501 or DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.



FLOW CHART NO.2

No DVD operation is possible from the remote control unit. (Operation is possible from the unit.)

↓

Is 5V voltage supplied to Pin(3) terminal of the RM1501 (remote control receiver)? — No → Check AL+5V line, and service it if defective.

↓ Yes

Is the "L" pulse sent out from Pin(1) terminal of the RM1501 (remote control receiver) when the remote control unit is activated? — No → Replace the RM1501 (remote control receiver). Replace remote control unit if needed.

↓ Yes

Is the "L" pulse signal supplied to Pin(14) of IC501? — No → Check the line between the RM1501 (remote control receiver) and Pin(14) of IC501, and service it if defective.

↓ Yes

Replace IC501 or DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.

FLOW CHART NO.3

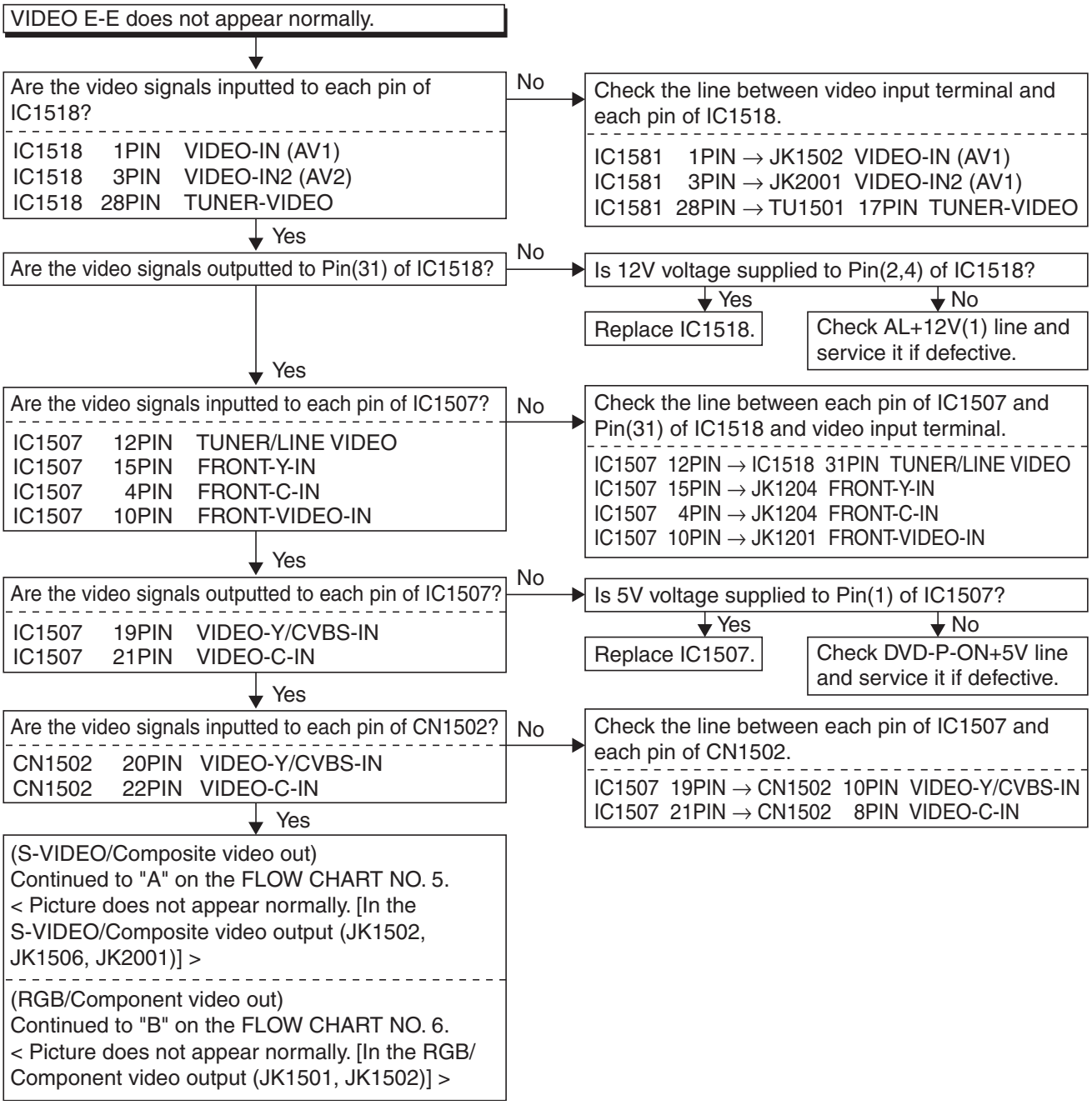
The [No Disc] indication.

Both picture and sound do not operate normally.

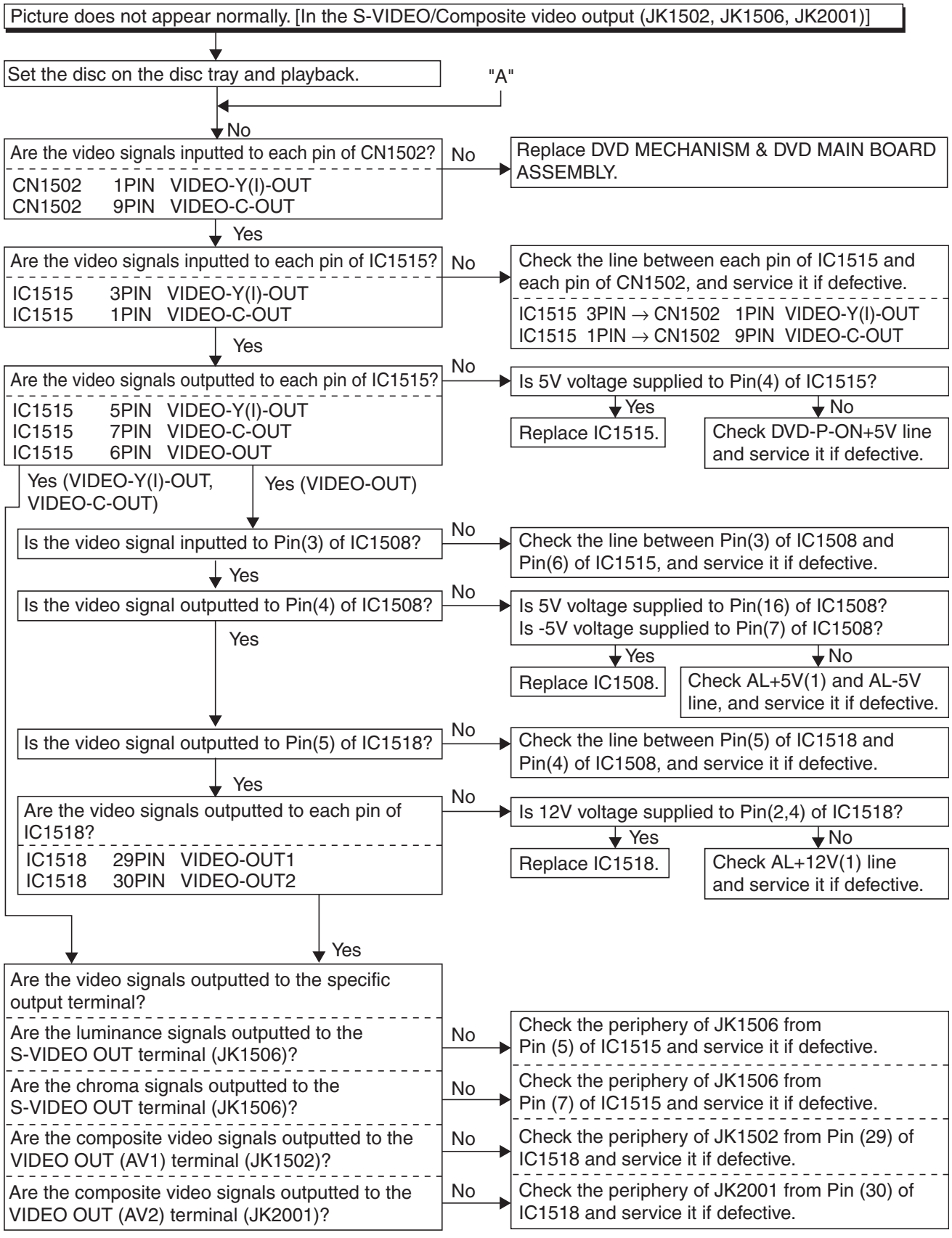
↓

Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.

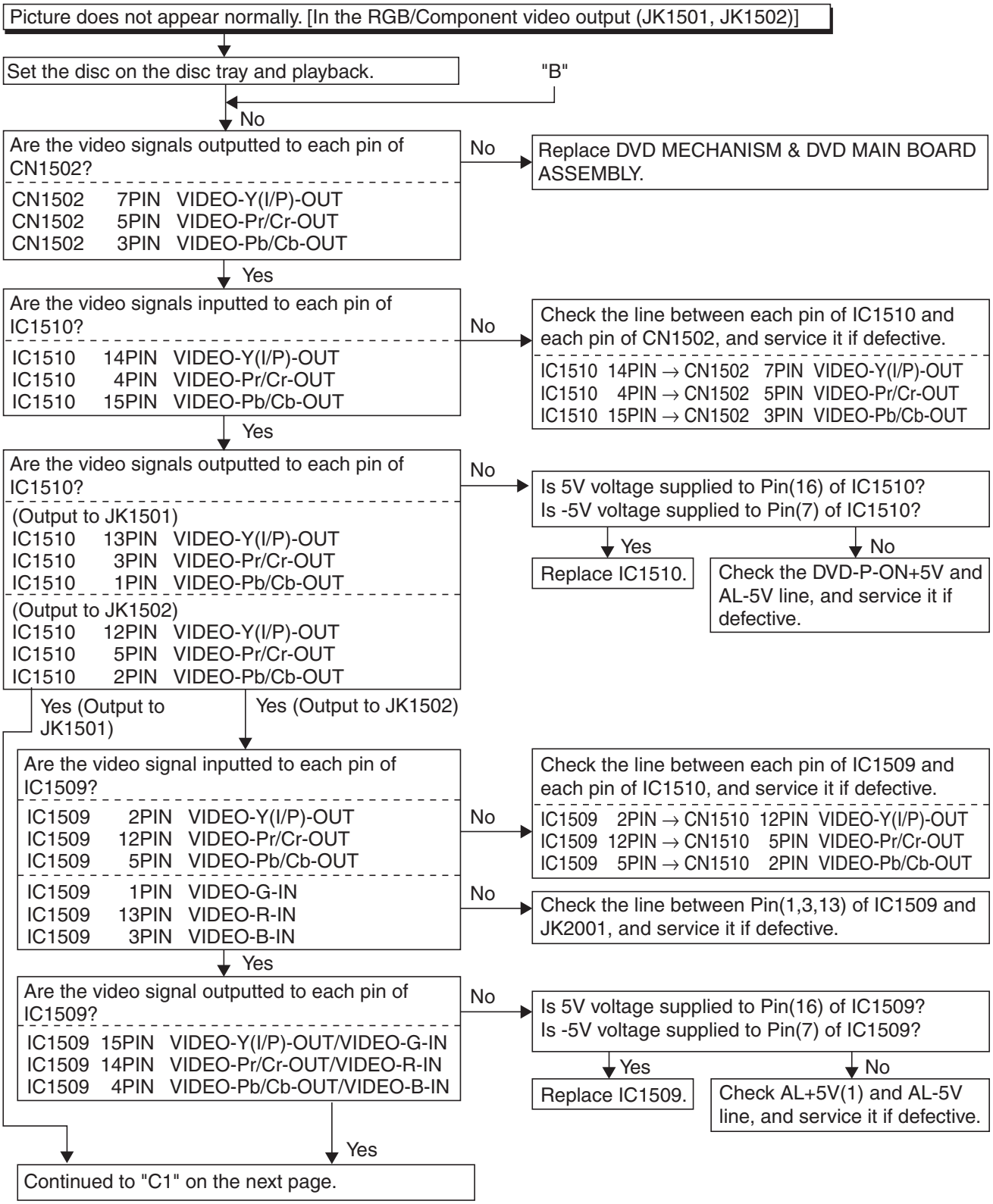
FLOW CHART NO.4

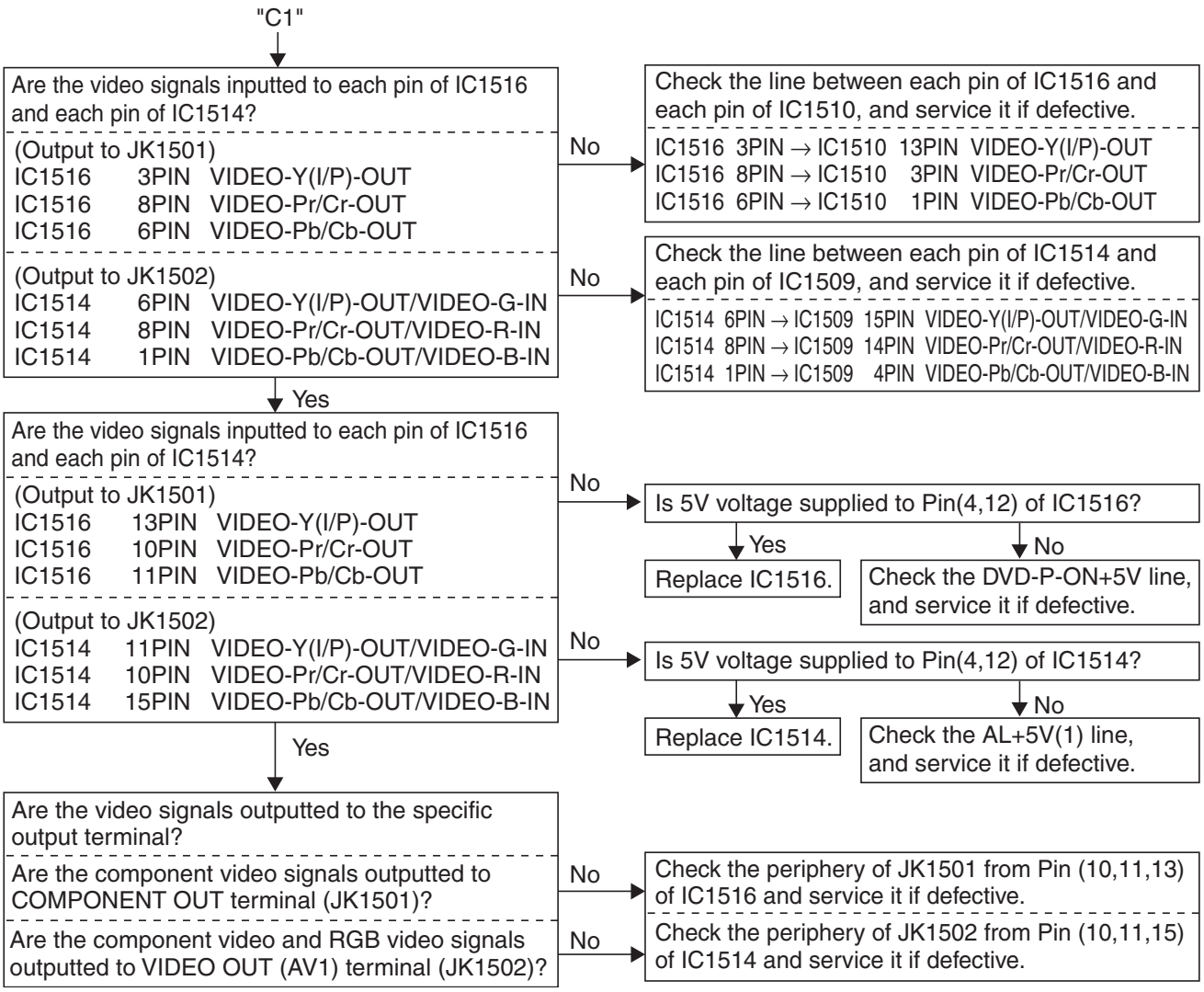


FLOW CHART NO.5

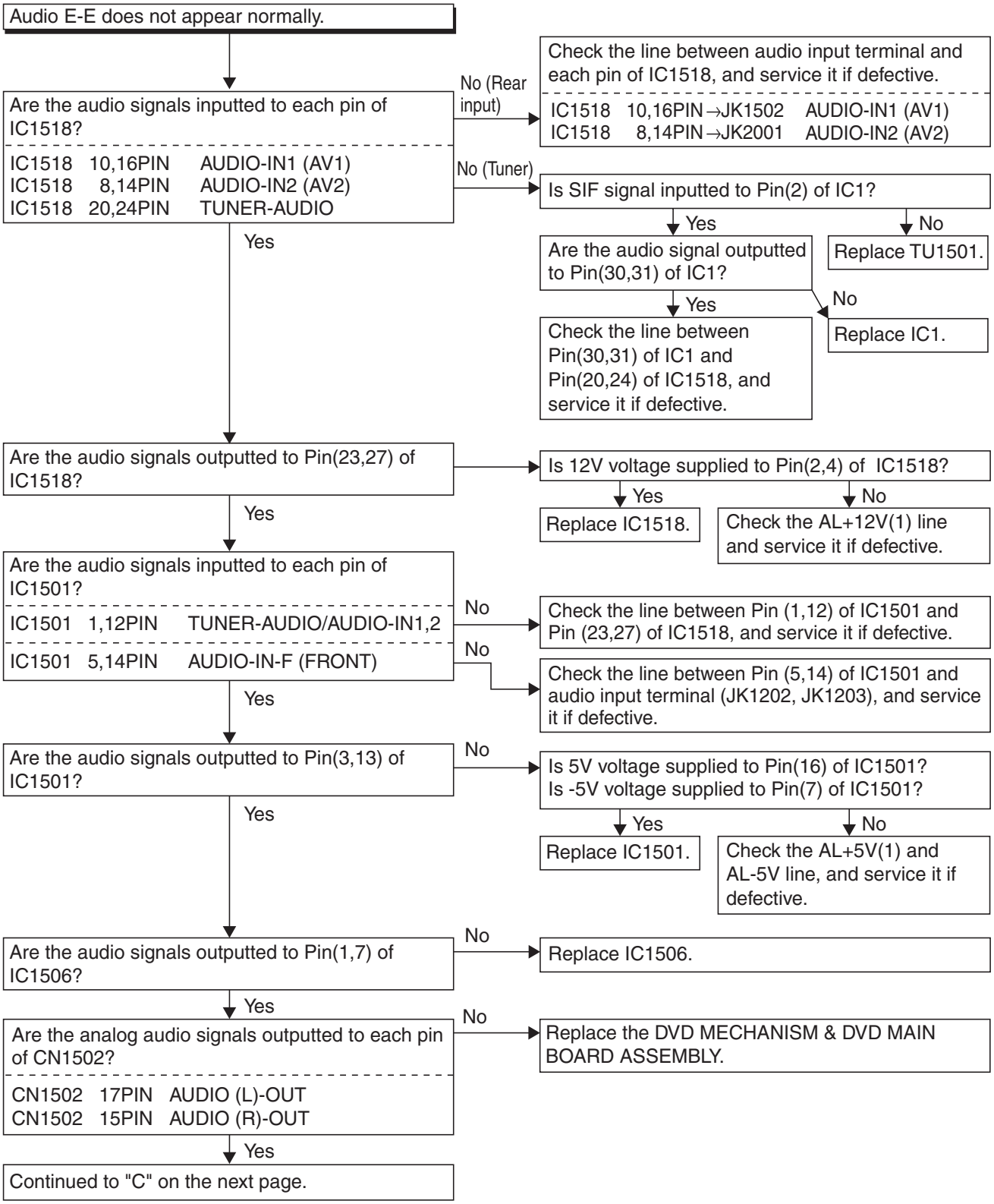

Picture does not appear normally. [In the S-VIDEO/Composite video output (JK1502, JK1506, JK2001)]
Set the disc on the disc tray and playback.
"A"
No
Are the video signals inputted to each pin of CN1502?
CN1502 1PIN VIDEO-Y(I)-OUT
CN1502 9PIN VIDEO-C-OUT
No
Replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the video signals inputted to each pin of IC1515?
IC1515 3PIN VIDEO-Y(I)-OUT
IC1515 1PIN VIDEO-C-OUT
No
Check the line between each pin of IC1515 and each pin of CN1502, and service it if defective.
IC1515 3PIN → CN1502 1PIN VIDEO-Y(I)-OUT
IC1515 1PIN → CN1502 9PIN VIDEO-C-OUT
Yes
Are the video signals outputted to each pin of IC1515?
IC1515 5PIN VIDEO-Y(I)-OUT
IC1515 7PIN VIDEO-C-OUT
IC1515 6PIN VIDEO-OUT
No
Is 5V voltage supplied to Pin(4) of IC1515?
Yes
Replace IC1515.
No
Check DVD-P-ON+5V line and service it if defective.
Yes (VIDEO-Y(I)-OUT, VIDEO-C-OUT)
Yes (VIDEO-OUT)
Is the video signal inputted to Pin(3) of IC1508?
No
Check the line between Pin(3) of IC1508 and Pin(6) of IC1515, and service it if defective.
Yes
Is the video signal outputted to Pin(4) of IC1508?
No
Is 5V voltage supplied to Pin(16) of IC1508?
Is -5V voltage supplied to Pin(7) of IC1508?
Yes
Replace IC1508.
No
Check AL+5V(1) and AL-5V line, and service it if defective.
Yes
Is the video signal outputted to Pin(5) of IC1518?
No
Check the line between Pin(5) of IC1518 and Pin(4) of IC1508, and service it if defective.
Yes
Are the video signals outputted to each pin of IC1518?
IC1518 29PIN VIDEO-OUT1
IC1518 30PIN VIDEO-OUT2
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
Replace IC1518.
No
Check AL+12V(1) line and service it if defective.
Yes
Are the video signals outputted to the specific output terminal?
Are the luminance signals outputted to the S-VIDEO OUT terminal (JK1506)?
No
Check the periphery of JK1506 from Pin (5) of IC1515 and service it if defective.
Are the chroma signals outputted to the S-VIDEO OUT terminal (JK1506)?
No
Check the periphery of JK1506 from Pin (7) of IC1515 and service it if defective.
Are the composite video signals outputted to the VIDEO OUT (AV1) terminal (JK1502)?
No
Check the periphery of JK1502 from Pin (29) of IC1518 and service it if defective.
Are the composite video signals outputted to the VIDEO OUT (AV2) terminal (JK2001)?
No
Check the periphery of JK2001 from Pin (30) of IC1518 and service it if defective.

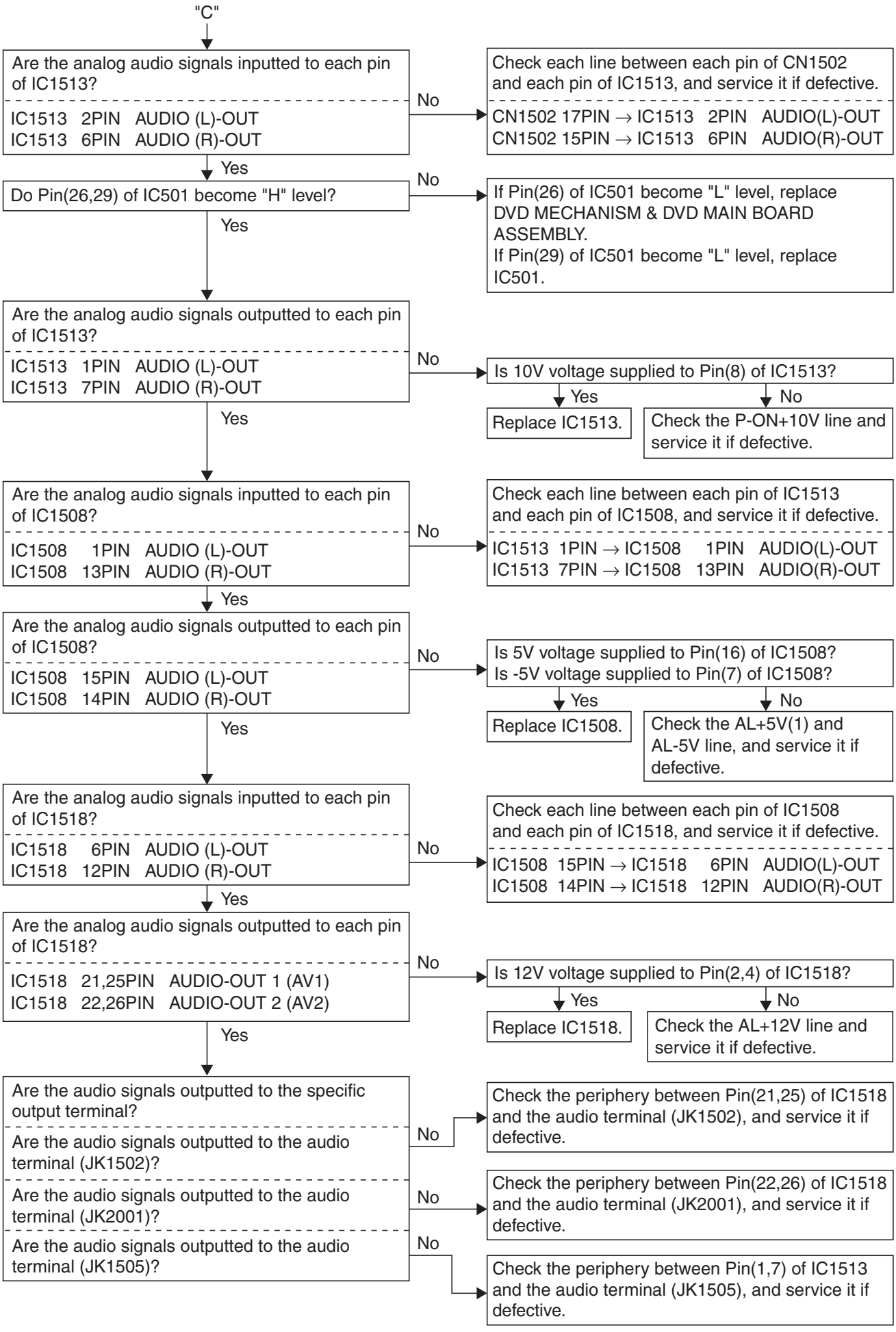
FLOW CHART NO.6


Picture does not appear normally. [In the RGB/Component video output (JK1501, JK1502)]
Set the disc on the disc tray and playback.
"B"
No
Are the video signals outputted to each pin of CN1502?
CN1502 7PIN VIDEO-Y(I/P)-OUT
CN1502 5PIN VIDEO-Pr/Cr-OUT
CN1502 3PIN VIDEO-Pb/Cb-OUT
No
Replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the video signals inputted to each pin of IC1510?
IC1510 14PIN VIDEO-Y(I/P)-OUT
IC1510 4PIN VIDEO-Pr/Cr-OUT
IC1510 15PIN VIDEO-Pb/Cb-OUT
No
Check the line between each pin of IC1510 and each pin of CN1502, and service it if defective.
IC1510 14PIN → CN1502 7PIN VIDEO-Y(I/P)-OUT
IC1510 4PIN → CN1502 5PIN VIDEO-Pr/Cr-OUT
IC1510 15PIN → CN1502 3PIN VIDEO-Pb/Cb-OUT
Yes
Are the video signals outputted to each pin of IC1510?
(Output to JK1501)
IC1510 13PIN VIDEO-Y(I/P)-OUT
IC1510 3PIN VIDEO-Pr/Cr-OUT
IC1510 1PIN VIDEO-Pb/Cb-OUT
(Output to JK1502)
IC1510 12PIN VIDEO-Y(I/P)-OUT
IC1510 5PIN VIDEO-Pr/Cr-OUT
IC1510 2PIN VIDEO-Pb/Cb-OUT
No
Is 5V voltage supplied to Pin(16) of IC1510?
Is -5V voltage supplied to Pin(7) of IC1510?
Yes
Replace IC1510.
No
Check the DVD-P-ON+5V and AL-5V line, and service it if defective.
Yes (Output to JK1501)
Yes (Output to JK1502)
Are the video signal inputted to each pin of IC1509?
IC1509 2PIN VIDEO-Y(I/P)-OUT
IC1509 12PIN VIDEO-Pr/Cr-OUT
IC1509 5PIN VIDEO-Pb/Cb-OUT
No
Check the line between each pin of IC1509 and each pin of IC1510, and service it if defective.
IC1509 2PIN → CN1510 12PIN VIDEO-Y(I/P)-OUT
IC1509 12PIN → CN1510 5PIN VIDEO-Pr/Cr-OUT
IC1509 5PIN → CN1510 2PIN VIDEO-Pb/Cb-OUT
IC1509 1PIN VIDEO-G-IN
IC1509 13PIN VIDEO-R-IN
IC1509 3PIN VIDEO-B-IN
No
Check the line between Pin(1,3,13) of IC1509 and JK2001, and service it if defective.
Yes
Are the video signal outputted to each pin of IC1509?
IC1509 15PIN VIDEO-Y(I/P)-OUT/VIDEO-G-IN
IC1509 14PIN VIDEO-Pr/Cr-OUT/VIDEO-R-IN
IC1509 4PIN VIDEO-Pb/Cb-OUT/VIDEO-B-IN
No
Is 5V voltage supplied to Pin(16) of IC1509?
Is -5V voltage supplied to Pin(7) of IC1509?
Yes
Replace IC1509.
No
Check AL+5V(1) and AL-5V line, and service it if defective.
Yes
Continued to "C1" on the next page.

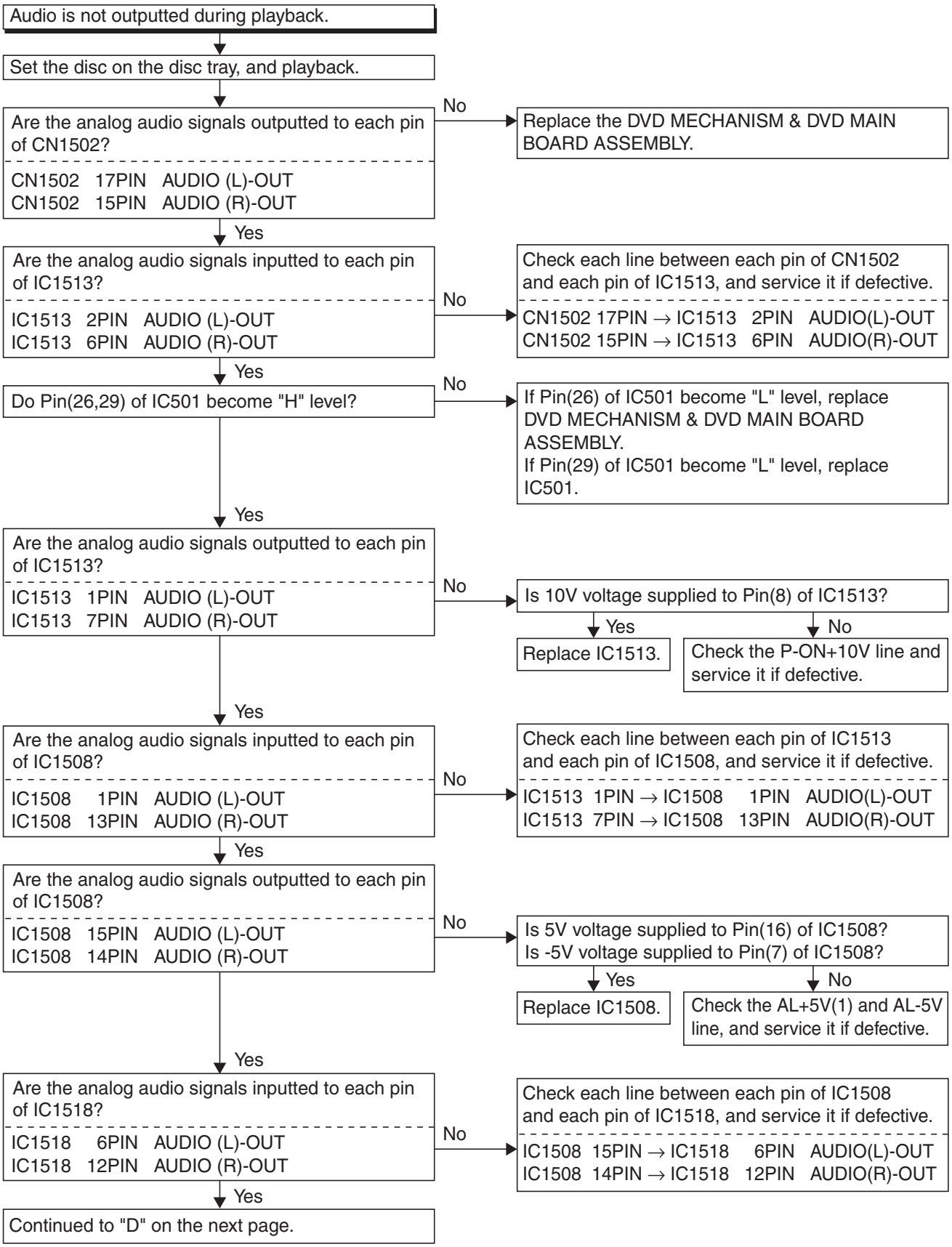

"C1"
Are the video signals inputted to each pin of IC1516 and each pin of IC1514?
(Output to JK1501)
IC1516 3PIN VIDEO-Y(I/P)-OUT
IC1516 8PIN VIDEO-Pr/Cr-OUT
IC1516 6PIN VIDEO-Pb/Cb-OUT
(Output to JK1502)
IC1514 6PIN VIDEO-Y(I/P)-OUT/VIDEO-G-IN
IC1514 8PIN VIDEO-Pr/Cr-OUT/VIDEO-R-IN
IC1514 1PIN VIDEO-Pb/Cb-OUT/VIDEO-B-IN
No
Check the line between each pin of IC1516 and each pin of IC1510, and service it if defective.
IC1516 3PIN → IC1510 13PIN VIDEO-Y(I/P)-OUT
IC1516 8PIN → IC1510 3PIN VIDEO-Pr/Cr-OUT
IC1516 6PIN → IC1510 1PIN VIDEO-Pb/Cb-OUT
No
Check the line between each pin of IC1514 and each pin of IC1509, and service it if defective.
IC1514 6PIN → IC1509 15PIN VIDEO-Y(I/P)-OUT/VIDEO-G-IN
IC1514 8PIN → IC1509 14PIN VIDEO-Pr/Cr-OUT/VIDEO-R-IN
IC1514 1PIN → IC1509 4PIN VIDEO-Pb/Cb-OUT/VIDEO-B-IN
Yes
Are the video signals inputted to each pin of IC1516 and each pin of IC1514?
(Output to JK1501)
IC1516 13PIN VIDEO-Y(I/P)-OUT
IC1516 10PIN VIDEO-Pr/Cr-OUT
IC1516 11PIN VIDEO-Pb/Cb-OUT
(Output to JK1502)
IC1514 11PIN VIDEO-Y(I/P)-OUT/VIDEO-G-IN
IC1514 10PIN VIDEO-Pr/Cr-OUT/VIDEO-R-IN
IC1514 15PIN VIDEO-Pb/Cb-OUT/VIDEO-B-IN
No
Is 5V voltage supplied to Pin(4,12) of IC1516?
Yes
Replace IC1516.
No
Check the DVD-P-ON+5V line, and service it if defective.
No
Is 5V voltage supplied to Pin(4,12) of IC1514?
Yes
Replace IC1514.
No
Check the AL+5V(1) line, and service it if defective.
Yes
Are the video signals outputted to the specific output terminal?
Are the component video signals outputted to COMPONENT OUT terminal (JK1501)?
No
Check the periphery of JK1501 from Pin (10,11,13) of IC1516 and service it if defective.
Are the component video and RGB video signals outputted to VIDEO OUT (AV1) terminal (JK1502)?
No
Check the periphery of JK1502 from Pin (10,11,15) of IC1514 and service it if defective.

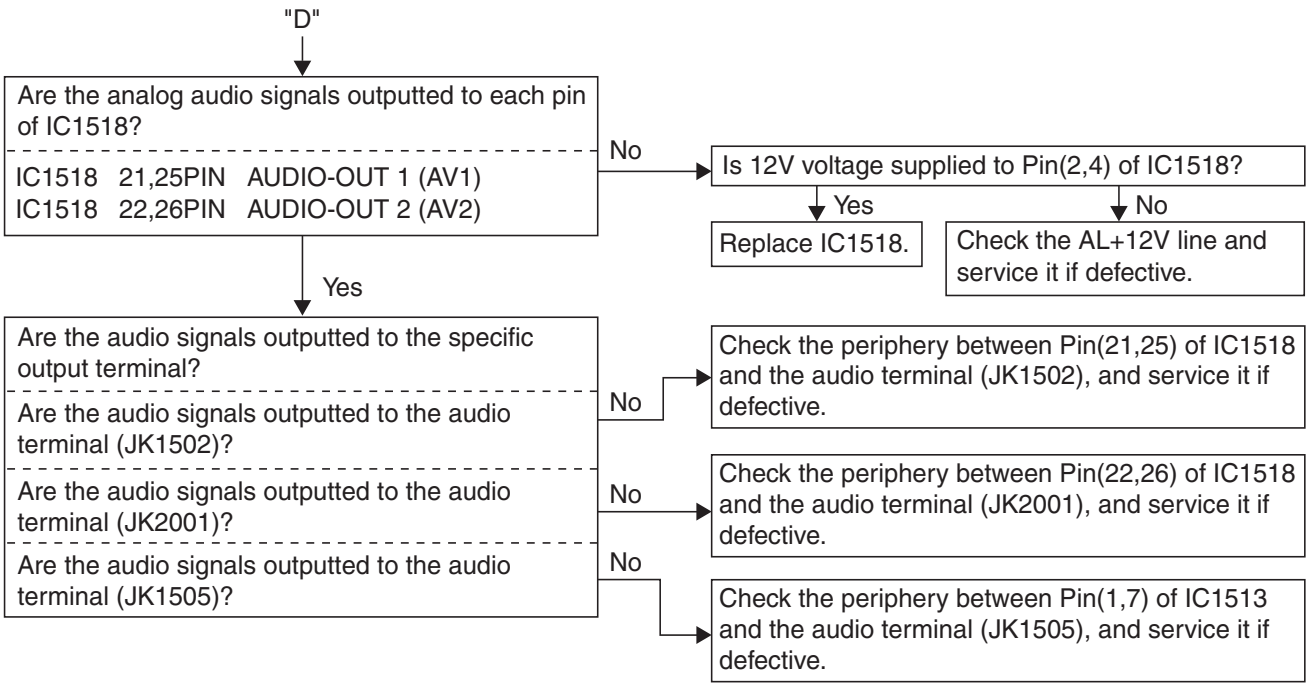
FLOW CHART NO.7


Audio E-E does not appear normally.
Are the audio signals inputted to each pin of IC1518?
IC1518 10,16PIN AUDIO-IN1 (AV1)
IC1518 8,14PIN AUDIO-IN2 (AV2)
IC1518 20,24PIN TUNER-AUDIO
No (Rear input)
Check the line between audio input terminal and each pin of IC1518, and service it if defective.
IC1518 10,16PIN→JK1502 AUDIO-IN1 (AV1)
IC1518 8,14PIN→JK2001 AUDIO-IN2 (AV2)
No (Tuner)
Is SIF signal inputted to Pin(2) of IC1?
Yes
No
Replace TU1501.
Are the audio signal outputted to Pin(30,31) of IC1?
Yes
No
Replace IC1.
Check the line between Pin(30,31) of IC1 and Pin(20,24) of IC1518, and service it if defective.
Yes
Are the audio signals outputted to Pin(23,27) of IC1518?
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V(1) line and service it if defective.
Yes
Are the audio signals inputted to each pin of IC1501?
IC1501 1,12PIN TUNER-AUDIO/AUDIO-IN1,2
IC1501 5,14PIN AUDIO-IN-F (FRONT)
No
Check the line between Pin (1,12) of IC1501 and Pin (23,27) of IC1518, and service it if defective.
No
Check the line between Pin (5,14) of IC1501 and audio input terminal (JK1202, JK1203), and service it if defective.
Yes
Are the audio signals outputted to Pin(3,13) of IC1501?
No
Is 5V voltage supplied to Pin(16) of IC1501?
Is -5V voltage supplied to Pin(7) of IC1501?
Yes
No
Replace IC1501.
Check the AL+5V(1) and AL-5V line, and service it if defective.
Yes
Are the audio signals outputted to Pin(1,7) of IC1506?
No
Replace IC1506.
Yes
Are the analog audio signals outputted to each pin of CN1502?
CN1502 17PIN AUDIO (L)-OUT
CN1502 15PIN AUDIO (R)-OUT
No
Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Continued to "C" on the next page.


"C"
Are the analog audio signals inputted to each pin of IC1513?
IC1513 2PIN AUDIO (L)-OUT
IC1513 6PIN AUDIO (R)-OUT
No
Check each line between each pin of CN1502 and each pin of IC1513, and service it if defective.
CN1502 17PIN → IC1513 2PIN AUDIO(L)-OUT
CN1502 15PIN → IC1513 6PIN AUDIO(R)-OUT
Yes
Do Pin(26,29) of IC501 become "H" level?
No
If Pin(26) of IC501 become "L" level, replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
If Pin(29) of IC501 become "L" level, replace IC501.
Yes
Are the analog audio signals outputted to each pin of IC1513?
IC1513 1PIN AUDIO (L)-OUT
IC1513 7PIN AUDIO (R)-OUT
No
Is 10V voltage supplied to Pin(8) of IC1513?
Yes
No
Replace IC1513.
Check the P-ON+10V line and service it if defective.
Yes
Are the analog audio signals inputted to each pin of IC1508?
IC1508 1PIN AUDIO (L)-OUT
IC1508 13PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1513 and each pin of IC1508, and service it if defective.
IC1513 1PIN → IC1508 1PIN AUDIO(L)-OUT
IC1513 7PIN → IC1508 13PIN AUDIO(R)-OUT
Yes
Are the analog audio signals outputted to each pin of IC1508?
IC1508 15PIN AUDIO (L)-OUT
IC1508 14PIN AUDIO (R)-OUT
No
Is 5V voltage supplied to Pin(16) of IC1508?
Is -5V voltage supplied to Pin(7) of IC1508?
Yes
No
Replace IC1508.
Check the AL+5V(1) and AL-5V line, and service it if defective.
Yes
Are the analog audio signals inputted to each pin of IC1518?
IC1518 6PIN AUDIO (L)-OUT
IC1518 12PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1508 and each pin of IC1518, and service it if defective.
IC1508 15PIN → IC1518 6PIN AUDIO(L)-OUT
IC1508 14PIN → IC1518 12PIN AUDIO(R)-OUT
Yes
Are the analog audio signals outputted to each pin of IC1518?
IC1518 21,25PIN AUDIO-OUT 1 (AV1)
IC1518 22,26PIN AUDIO-OUT 2 (AV2)
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1502)?
Are the audio signals outputted to the audio terminal (JK2001)?
Are the audio signals outputted to the audio terminal (JK1505)?
No
Check the periphery between Pin(21,25) of IC1518 and the audio terminal (JK1502), and service it if defective.
No
Check the periphery between Pin(22,26) of IC1518 and the audio terminal (JK2001), and service it if defective.
No
Check the periphery between Pin(1,7) of IC1513 and the audio terminal (JK1505), and service it if defective.

FLOW CHART NO.8


Audio is not outputted during playback.
Set the disc on the disc tray, and playback.
Are the analog audio signals outputted to each pin of CN1502?
CN1502 17PIN AUDIO (L)-OUT
CN1502 15PIN AUDIO (R)-OUT
No
Replace the DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
Yes
Are the analog audio signals inputted to each pin of IC1513?
IC1513 2PIN AUDIO (L)-OUT
IC1513 6PIN AUDIO (R)-OUT
No
Check each line between each pin of CN1502 and each pin of IC1513, and service it if defective.
CN1502 17PIN → IC1513 2PIN AUDIO(L)-OUT
CN1502 15PIN → IC1513 6PIN AUDIO(R)-OUT
Yes
Do Pin(26,29) of IC501 become "H" level?
No
If Pin(26) of IC501 become "L" level, replace DVD MECHANISM & DVD MAIN BOARD ASSEMBLY.
If Pin(29) of IC501 become "L" level, replace IC501.
Yes
Are the analog audio signals outputted to each pin of IC1513?
IC1513 1PIN AUDIO (L)-OUT
IC1513 7PIN AUDIO (R)-OUT
No
Is 10V voltage supplied to Pin(8) of IC1513?
Yes
No
Replace IC1513.
Check the P-ON+10V line and service it if defective.
Yes
Are the analog audio signals inputted to each pin of IC1508?
IC1508 1PIN AUDIO (L)-OUT
IC1508 13PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1513 and each pin of IC1508, and service it if defective.
IC1513 1PIN → IC1508 1PIN AUDIO(L)-OUT
IC1513 7PIN → IC1508 13PIN AUDIO(R)-OUT
Yes
Are the analog audio signals outputted to each pin of IC1508?
IC1508 15PIN AUDIO (L)-OUT
IC1508 14PIN AUDIO (R)-OUT
No
Is 5V voltage supplied to Pin(16) of IC1508?
Is -5V voltage supplied to Pin(7) of IC1508?
Yes
No
Replace IC1508.
Check the AL+5V(1) and AL-5V line, and service it if defective.
Yes
Are the analog audio signals inputted to each pin of IC1518?
IC1518 6PIN AUDIO (L)-OUT
IC1518 12PIN AUDIO (R)-OUT
No
Check each line between each pin of IC1508 and each pin of IC1518, and service it if defective.
IC1508 15PIN → IC1518 6PIN AUDIO(L)-OUT
IC1508 14PIN → IC1518 12PIN AUDIO(R)-OUT
Yes
Continued to "D" on the next page.


"D"
Are the analog audio signals outputted to each pin of IC1518?
IC1518 21,25PIN AUDIO-OUT 1 (AV1)
IC1518 22,26PIN AUDIO-OUT 2 (AV2)
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1502)?
No
Check the periphery between Pin(21,25) of IC1518 and the audio terminal (JK1502), and service it if defective.
Are the audio signals outputted to the audio terminal (JK2001)?
No
Check the periphery between Pin(22,26) of IC1518 and the audio terminal (JK2001), and service it if defective.
Are the audio signals outputted to the audio terminal (JK1505)?
No
Check the periphery between Pin(1,7) of IC1513 and the audio terminal (JK1505), and service it if defective.

3 VCR Section

FLOW CHART NO.1

The key operation is not functioning.

↓

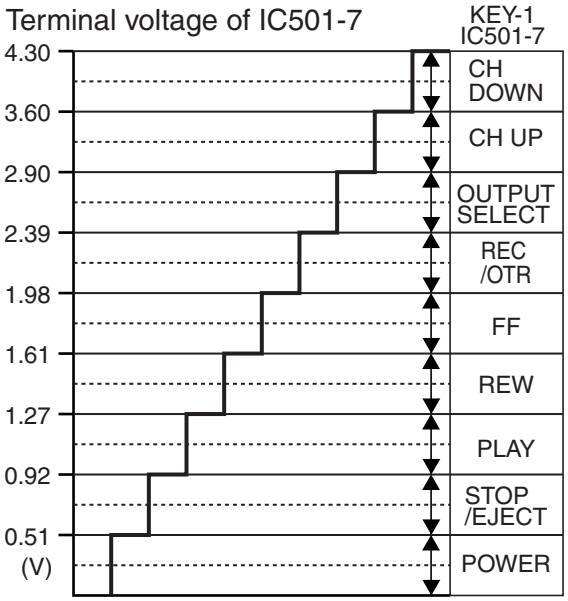
Are the contact point and the installation state of the key switches normal? — No → Re-install some key switches correctly or replace some key switches.

↓ Yes

Is the control voltage normally inputted into Pin(7) of IC501? — No → Check the key switches and their periphery, and service it if defective.

↓ Yes

Replace IC501.



FLOW CHART NO.2

No VCR operation is possible from the remote control unit. (Operation is possible from the unit.)

↓

Is 5V voltage supplied to the Pin(3) terminal of the RM1501 (remote control receiver)? — No → Check AL+5V line and service it if defective.

↓ Yes

Is the "L" pulse sent out from Pin(1) terminal of the RM1501 (remote control receiver) when the remote control unit is activated? — No → Replace the RM1501 (remote control receiver). Replace remote control unit if need.

↓ Yes

Is the "L" pulse signal supplied to Pin(14) of IC501? — No → Check the line between the RM1501 (remote control receiver) and Pin(14) of IC501, and service it if defective.

↓ Yes

Replace IC501.

FLOW CHART NO.3

Cassette tape can not be loaded.

↓

When loading a cassette tape, on Pin(10) of IC501, does the "L" pulse switch to the "H" pulse?

No → Check the line between the start sensor and Pin(10) of IC501, and service it if defective.

↓ Yes

When loading a cassette tape, is the specified voltage (approximately 13V) outputted to the terminal of the Loading Motor Unit?

No → Replace the Capstan Motor Unit.

↓ Yes

Replace the Loading Motor Unit.

FLOW CHART NO.4

Cassette tape is ejected right after the loading.

↓

When loading a cassette tape, on Pin(10) of IC501, does the "L" pulse switch to the "H" pulse?

No → Check the line between the start sensor and Pin(10) of IC501, and service it if defective.

↓ Yes

When loading a cassette tape, on Pin(4) of IC501, does the "L" pulse switch to the "H" pulse?

No → Check the line between the end sensor and Pin(4) of IC501, and service it if defective.

↓ Yes

When loading a cassette tape, does the LD-SW operate normally?

No → Check the line between the LD-SW(SW507) and Pin(9) of IC501, and service it if defective.

↓ Yes

Replace IC501.

FLOW CHART NO.5

Cassette tape can not be ejected.

↓

When pressing the eject button, does the Capstan Motor start rotating?

No → Refer to "FLOW CHART NO.6 " <The Capstan Motor does not rotate>.

↓ Yes

While the Capstan Motor is rotating, is the Takeup Reel rotating?

No → Check the Reel Disc or Clutch Assembly, and service it if defective.

↓ Yes

While the Takeup Reel is rotating, is the reel pulse signal inputted to Pin(80) of IC501?

No → Check the line between the Takeup Reel sensor and Pin(80) of IC501, and service it if defective.

↓ Yes

While the reel pulse signal is inputting, is "L" pulse outputted to Pin(81) of IC501?

No → Replace IC501.

↓ Yes

Is the specified voltage (approximately 13V) outputted to the terminal of the Lading Motor Unit?

No → Replace the Capstan Motor unit.

↓ Yes

Is the Loading Motor rotating?

No → Replace the Loading Motor unit.

↓ Yes

Check the Cam Gear or Rack Assembly, etc., and service it if defective.

FLOW CHART NO.6

Capstan Motor does not rotate.

↓

Is 5V voltage supplied to Pin(2) of CN502? — No → Check the P-ON+5V line and service it if defective.

↓ Yes

Is over approximately 2.6V voltage supplied to Pin(5) of CN502? — No → Check the line between Pin(5) of CN502 and Pin(76) of IC501, and service it if defective.

↓ Yes

Is 12V voltage supplied to Pin(1,11) of CN502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit.

FLOW CHART NO.7

Drum Motor does not rotate.

↓

Is 5V voltage supplied to Pin(2) of CN502? — No → Check the P-ON+5V line and service it if defective.

↓ Yes

Is over approximately 2.6V voltage supplied to Pin(8) of CN502? — No → Check the line between Pin(8) of CN502 and Pin(77) of IC501, and service it if defective.

↓ Yes

Is 12V voltage supplied at Pin(1,11) of CN502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit or Cylinder Assembly.

FLOW CHART NO.8

Drum Motor rotates only for a few seconds.

↓

Is the drum PG/FG signal inputted to Pin(90) of IC501? — No → Replace the Capstan Motor Unit or the Cylinder Assembly.

↓ Yes

Is the RF-SW signal outputted to Pin(18) of IC501? — No → Replace IC501.

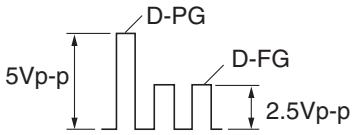
↓ Yes

Is 12V voltage supplied Pin(1,11) of CN 502? — No → Check the AL+12V and AL+16V/+12V line, and service it if defective.

↓ Yes

Replace the Capstan Motor Unit or the Cylinder Assembly.

FLOW CHART NO.9



RF-SW signal is not outputted.

↓

Is the Drum Motor rotating? — No → Refer to "FLOW CHART NO.7" <Drum Motor does not rotate> and "FLOW CHART NO.8" <Drum Motor rotates only for a few seconds>.

↓ Yes

Is the drum PG/FG signal inputted to Pin(90) of IC501? — No → Replace the Capstan Motor Unit or the Cylinder Assembly.

↓ Yes

Replace IC501.

FLOW CHART NO.10

Video E-E does not appear.

Are the video signals inputted to each pin of IC1518?

IC1518 1PIN VIDEO-IN (AV1)
IC1518 3PIN VIDEO-IN2 (AV2)
IC1518 28PIN TUNER-VIDEO

No → Check the line between video input terminal and each pin of IC1518.

IC1581 1PIN → JK1502 VIDEO-IN (AV1)
IC1581 3PIN → JK2001 VIDEO-IN2 (AV1)
IC1581 28PIN → TU1501 17PIN TUNER-VIDEO

Yes

Are the video signals outputted to Pin(31) of IC1518?

No → Is 12V voltage supplied to Pin(2,4) of IC1518?

Yes → Replace IC1518.

No → Check AL+12V(1) line and service it if defective.

Yes

Are the video signals inputted to each pin of IC1507?

IC1507 12PIN TUNER/LINE VIDEO
IC1507 15PIN FRONT-Y-IN
IC1507 4PIN FRONT-C-IN
IC1507 10PIN FRONT-VIDEO-IN

No → Check the line between each pin of IC1507 and Pin(31) of IC1518 and video input terminal.

IC1507 12PIN → IC1518 31PIN TUNER/LINE VIDEO
IC1507 15PIN → JK1204 FRONT-Y-IN
IC1507 4PIN → JK1204 FRONT-C-IN
IC1507 10PIN → JK1201 FRONT-VIDEO-IN

Yes

Are the video signals outputted to Pin(20) of IC1507?

No → Is 5V voltage supplied to Pin(1) of IC1507?

Yes → Replace IC1507.

No → Check the DVD-P-ON+5V line and service it if defective.

Yes

Is the video signal inputted to Pins(48) of IC301?

No → Check the line between Pin(20) of IC1507 and Pin(48) of IC301, and service it if defective.

Yes

Is the C-SYNC signal outputted to Pin(67) of IC301?

Yes

Is the C-SYNC signal inputted to Pin(58) of IC501?

Yes

No → Check the line between Pin(67) of IC301 and Pin(58) of IC501, and service it if defective.

No

Is 5V voltage supplied to Pins(18,24,42,55,72) of IC301?

Yes

No → Check the P-ON+5V line and AL+5V line, and service it if defective.

Yes → Is the serial data and clock signal supplied to Pins(68,69) of IC301?

Yes → Replace IC301.

No → Check the line between Pins(68,69) of IC301 and Pins(71, 72) of IC501, and service it if defective.

Is the video signal inputted into Pin(5) of IC1508?

No → Check the line between Pin(65) of IC301 and Pin(5) of IC1508, and service it if defective.

Yes

Is the video signal outputted to Pin(4) of IC1508?

Yes → Is 5V voltage supplied to Pin(16) of IC1508?
Is -5V voltage supplied to Pin(7) of IC1508?

Yes → Replace IC1508.

No → Check the AL+5V(1) and AL-5V line, and service it if defective.

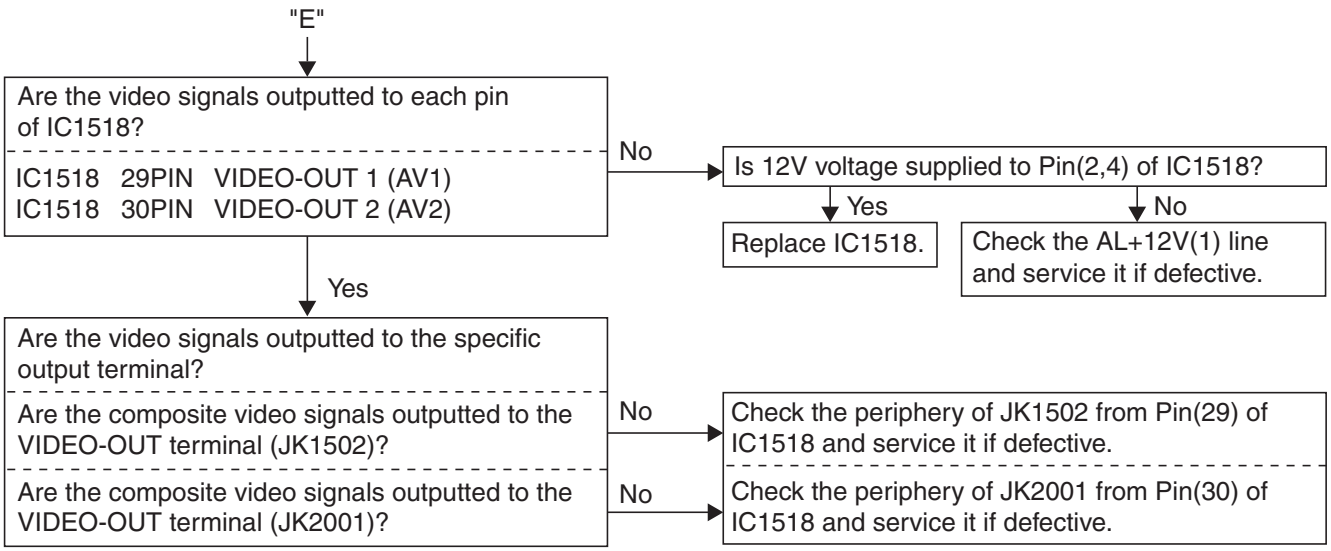
No

Is the video signal inputted to Pin(5) of IC1518?

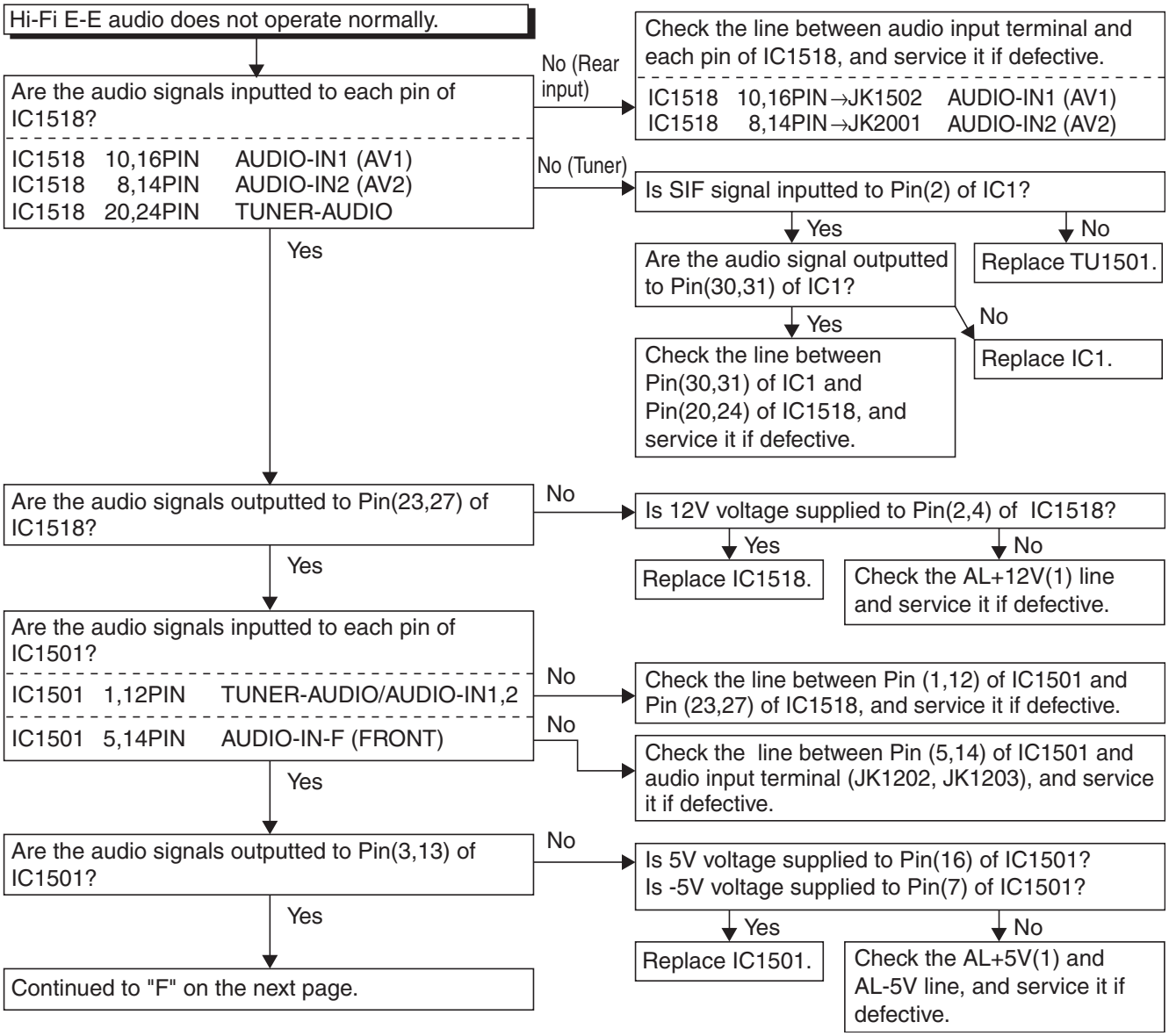
No → Check the line between Pin(4) of IC1508 and Pin(5) of IC1518, and service it if defective.

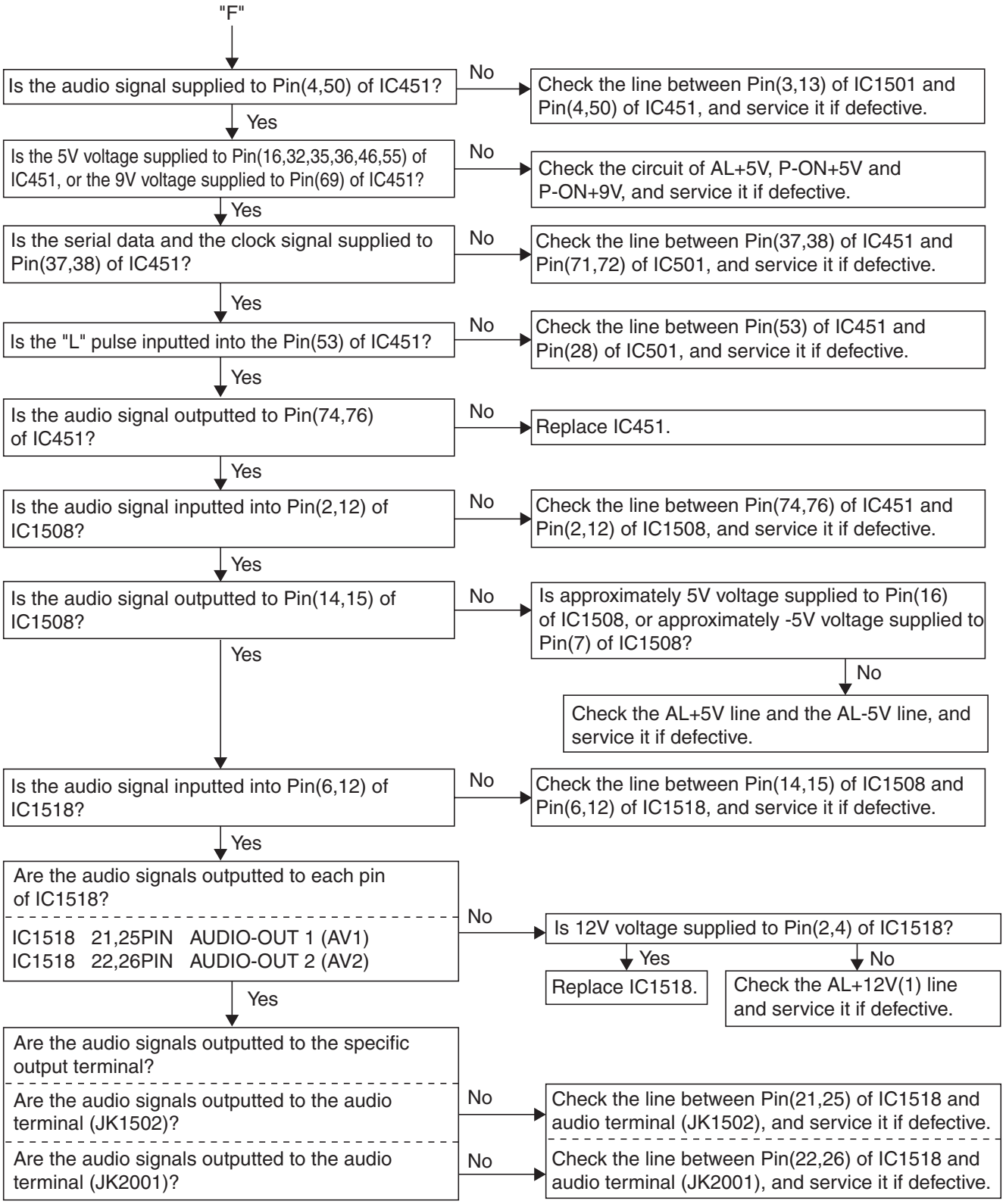
Yes

Continued to "E" on the next page.

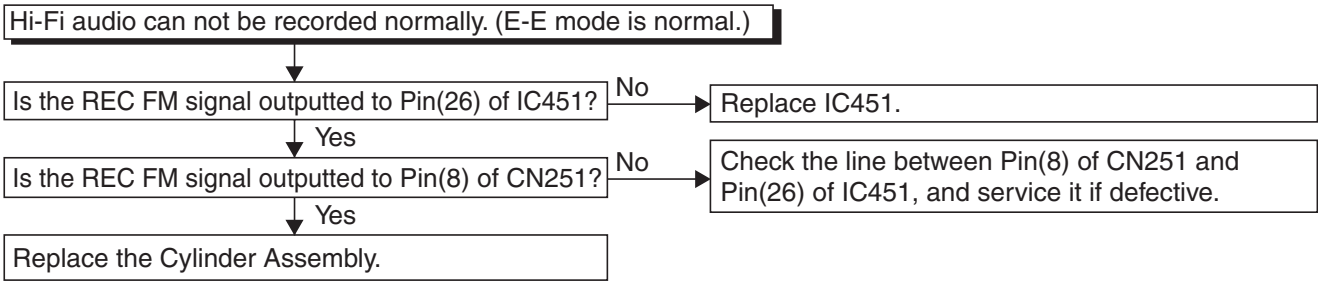

"E"
Are the video signals outputted to each pin of IC1518?
IC1518 29PIN VIDEO-OUT 1 (AV1)
IC1518 30PIN VIDEO-OUT 2 (AV2)
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V(1) line and service it if defective.
Yes
Are the video signals outputted to the specific output terminal?
Are the composite video signals outputted to the VIDEO-OUT terminal (JK1502)?
No
Check the periphery of JK1502 from Pin(29) of IC1518 and service it if defective.
Are the composite video signals outputted to the VIDEO-OUT terminal (JK2001)?
No
Check the periphery of JK2001 from Pin(30) of IC1518 and service it if defective.

FLOW CHART NO.11

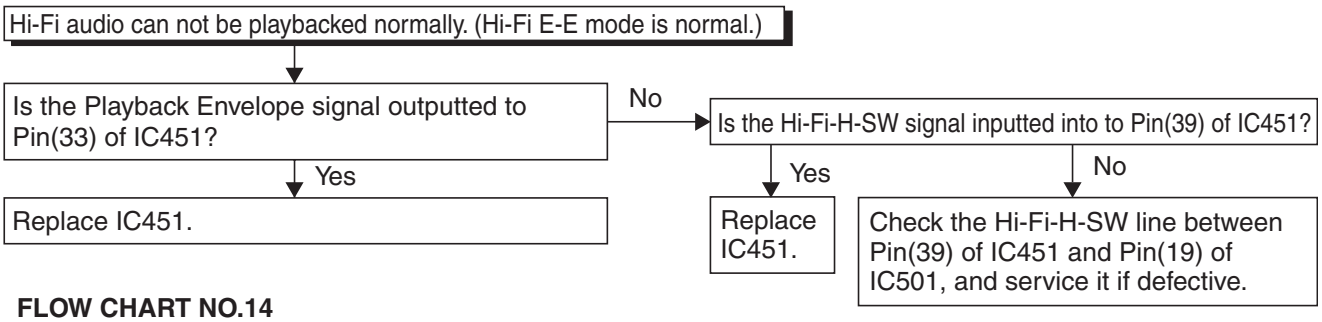

Hi-Fi E-E audio does not operate normally.
Are the audio signals inputted to each pin of IC1518?
IC1518 10,16PIN AUDIO-IN1 (AV1)
IC1518 8,14PIN AUDIO-IN2 (AV2)
IC1518 20,24PIN TUNER-AUDIO
No (Rear input)
Check the line between audio input terminal and each pin of IC1518, and service it if defective.
IC1518 10,16PIN→JK1502 AUDIO-IN1 (AV1)
IC1518 8,14PIN→JK2001 AUDIO-IN2 (AV2)
No (Tuner)
Is SIF signal inputted to Pin(2) of IC1?
Yes
No
Replace TU1501.
Are the audio signal outputted to Pin(30,31) of IC1?
Yes
No
Replace IC1.
Check the line between Pin(30,31) of IC1 and Pin(20,24) of IC1518, and service it if defective.
Yes
Are the audio signals outputted to Pin(23,27) of IC1518?
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
No
Replace IC1518.
Check the AL+12V(1) line and service it if defective.
Yes
Are the audio signals inputted to each pin of IC1501?
IC1501 1,12PIN TUNER-AUDIO/AUDIO-IN1,2
IC1501 5,14PIN AUDIO-IN-F (FRONT)
No
Check the line between Pin (1,12) of IC1501 and Pin (23,27) of IC1518, and service it if defective.
No
Check the line between Pin (5,14) of IC1501 and audio input terminal (JK1202, JK1203), and service it if defective.
Yes
Are the audio signals outputted to Pin(3,13) of IC1501?
No
Is 5V voltage supplied to Pin(16) of IC1501?
Is -5V voltage supplied to Pin(7) of IC1501?
Yes
No
Replace IC1501.
Check the AL+5V(1) and AL-5V line, and service it if defective.
Yes
Continued to "F" on the next page.


"F"
Is the audio signal supplied to Pin(4,50) of IC451?
No
Check the line between Pin(3,13) of IC1501 and Pin(4,50) of IC451, and service it if defective.
Yes
Is the 5V voltage supplied to Pin(16,32,35,36,46,55) of IC451, or the 9V voltage supplied to Pin(69) of IC451?
No
Check the circuit of AL+5V, P-ON+5V and P-ON+9V, and service it if defective.
Yes
Is the serial data and the clock signal supplied to Pin(37,38) of IC451?
No
Check the line between Pin(37,38) of IC451 and Pin(71,72) of IC501, and service it if defective.
Yes
Is the "L" pulse inputted into the Pin(53) of IC451?
No
Check the line between Pin(53) of IC451 and Pin(28) of IC501, and service it if defective.
Yes
Is the audio signal outputted to Pin(74,76) of IC451?
No
Replace IC451.
Yes
Is the audio signal inputted into Pin(2,12) of IC1508?
No
Check the line between Pin(74,76) of IC451 and Pin(2,12) of IC1508, and service it if defective.
Yes
Is the audio signal outputted to Pin(14,15) of IC1508?
No
Is approximately 5V voltage supplied to Pin(16) of IC1508, or approximately -5V voltage supplied to Pin(7) of IC1508?
No
Check the AL+5V line and the AL-5V line, and service it if defective.
Yes
Is the audio signal inputted into Pin(6,12) of IC1518?
No
Check the line between Pin(14,15) of IC1508 and Pin(6,12) of IC1518, and service it if defective.
Yes
Are the audio signals outputted to each pin of IC1518?
IC1518 21,25PIN AUDIO-OUT 1 (AV1)
IC1518 22,26PIN AUDIO-OUT 2 (AV2)
No
Is 12V voltage supplied to Pin(2,4) of IC1518?
Yes
Replace IC1518.
No
Check the AL+12V(1) line and service it if defective.
Yes
Are the audio signals outputted to the specific output terminal?
Are the audio signals outputted to the audio terminal (JK1502)?
No
Check the line between Pin(21,25) of IC1518 and audio terminal (JK1502), and service it if defective.
Are the audio signals outputted to the audio terminal (JK2001)?
No
Check the line between Pin(22,26) of IC1518 and audio terminal (JK2001), and service it if defective.

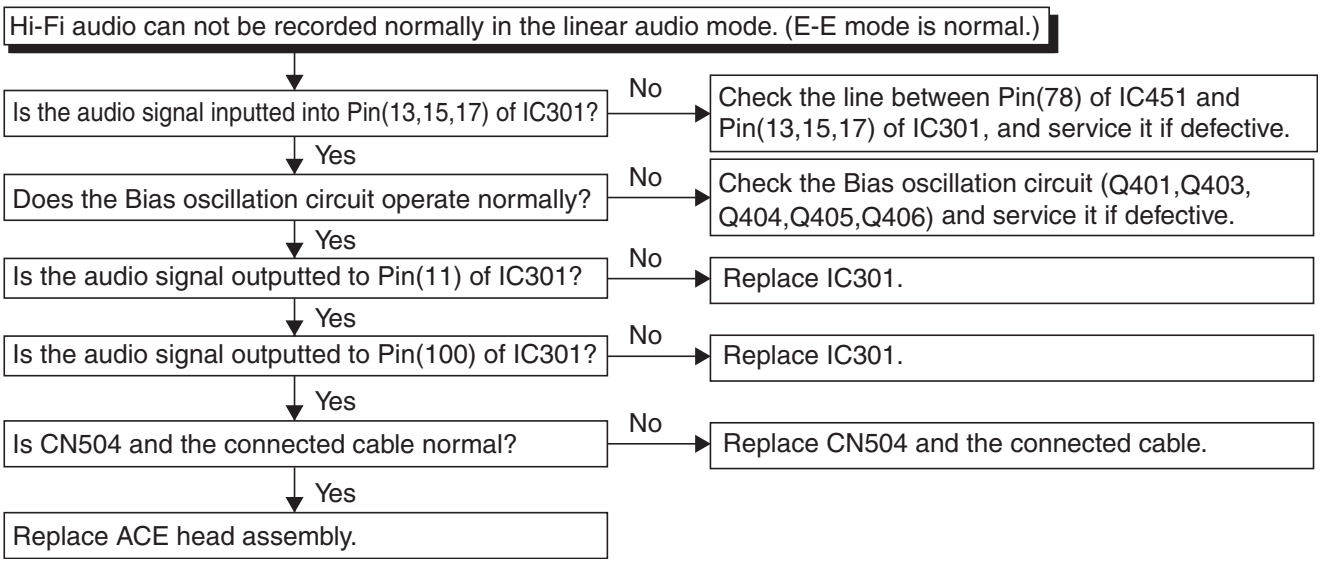
FLOW CHART NO.12


Hi-Fi audio can not be recorded normally. (E-E mode is normal.)
Is the REC FM signal outputted to Pin(26) of IC451?
No
Replace IC451.
Yes
Is the REC FM signal outputted to Pin(8) of CN251?
No
Check the line between Pin(8) of CN251 and Pin(26) of IC451, and service it if defective.
Yes
Replace the Cylinder Assembly.

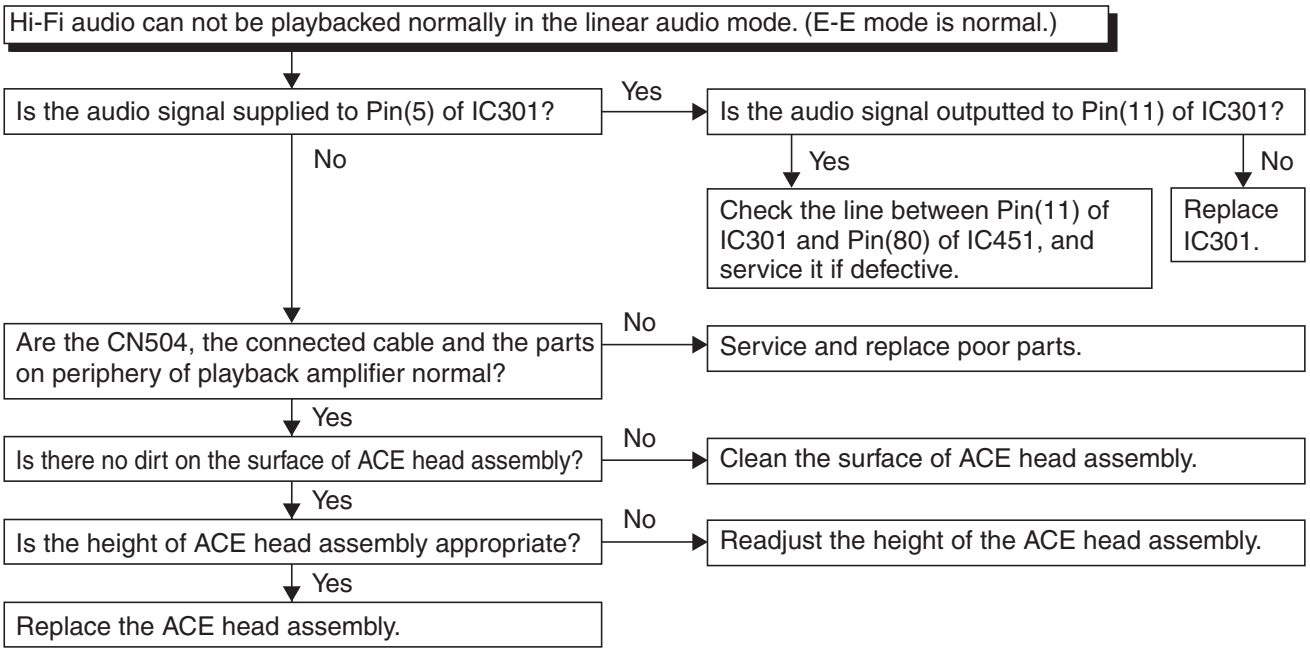
FLOW CHART NO.13


Hi-Fi audio can not be playbacked normally. (Hi-Fi E-E mode is normal.)
Is the Playback Envelope signal outputted to Pin(33) of IC451?
No
Is the Hi-Fi-H-SW signal inputted into to Pin(39) of IC451?
Yes
No
Yes
Replace IC451.
Replace IC451.
Check the Hi-Fi-H-SW line between Pin(39) of IC451 and Pin(19) of IC501, and service it if defective.

FLOW CHART NO.14


Hi-Fi audio can not be recorded normally in the linear audio mode. (E-E mode is normal.)
Is the audio signal inputted into Pin(13,15,17) of IC301?
No
Check the line between Pin(78) of IC451 and Pin(13,15,17) of IC301, and service it if defective.
Yes
Does the Bias oscillation circuit operate normally?
No
Check the Bias oscillation circuit (Q401,Q403, Q404,Q405,Q406) and service it if defective.
Yes
Is the audio signal outputted to Pin(11) of IC301?
No
Replace IC301.
Yes
Is the audio signal outputted to Pin(100) of IC301?
No
Replace IC301.
Yes
Is CN504 and the connected cable normal?
No
Replace CN504 and the connected cable.
Yes
Replace ACE head assembly.

FLOW CHART NO.15


Hi-Fi audio can not be playbacked normally in the linear audio mode. (E-E mode is normal.)
Is the audio signal supplied to Pin(5) of IC301?
Yes
Is the audio signal outputted to Pin(11) of IC301?
No
Yes
No
Check the line between Pin(11) of IC301 and Pin(80) of IC451, and service it if defective.
Replace IC301.
Are the CN504, the connected cable and the parts on periphery of playback amplifier normal?
No
Service and replace poor parts.
Yes
Is there no dirt on the surface of ACE head assembly?
No
Clean the surface of ACE head assembly.
Yes
Is the height of ACE head assembly appropriate?
No
Readjust the height of the ACE head assembly.
Yes
Replace the ACE head assembly.

FUNCTION INDICATOR SYMBOLS

< VCR Section >

Note:

If a mechanical malfunction occurs, the power is turned off. When the power comes on again after that by pressing [I/⏻] button, an error message is displayed on the TV screen for 5 seconds.

MODE	INDICATOR ACTIVE
When reel or capstan mechanism is not functioning correctly	"⏏ R" is displayed on a TV screen. (Refer to Fig. 1.)
When tape loading mechanism is not functioning correctly	"⏏ T" is displayed on a TV screen. (Refer to Fig. 2.)
When cassette loading mechanism is not functioning correctly	"⏏ C" is displayed on a TV screen. (Refer to Fig. 3.)
When the drum is not working properly	"⏏ D" is displayed on a TV screen. (Refer to Fig. 4.)
P-ON Power safety detection	"⏏ P" is displayed on a TV screen. (Refer to Fig. 5.)

TV screen

When reel or capstan mechanism is not functioning correctly

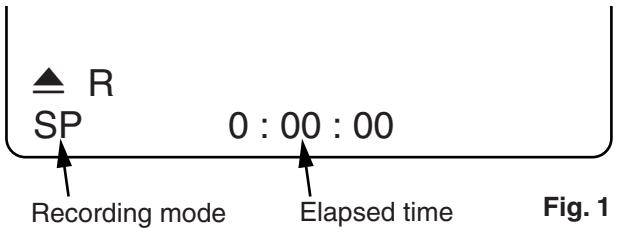


Fig. 1

When tape loading mechanism is not functioning correctly

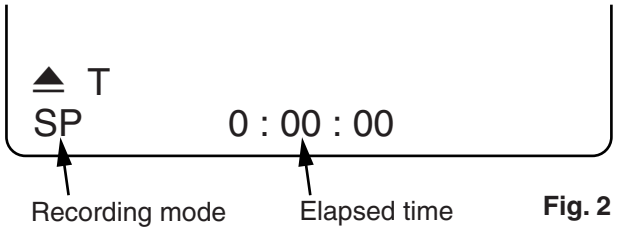


Fig. 2

When cassette loading mechanism is not functioning correctly

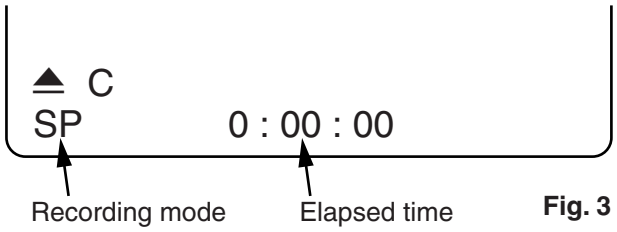


Fig. 3

When the drum is not working properly

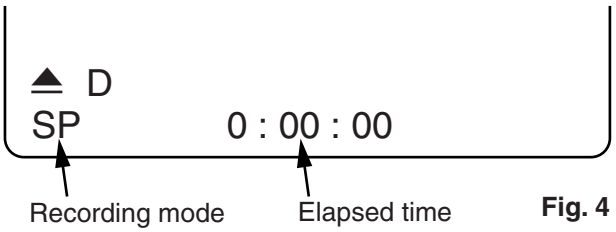


Fig. 4

P-ON Power safety detection

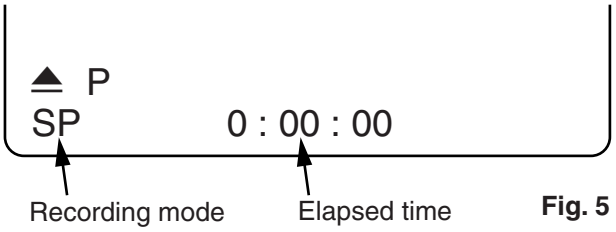
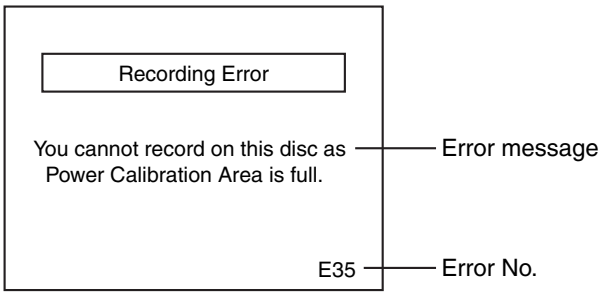


Fig. 5

< DVD Section >

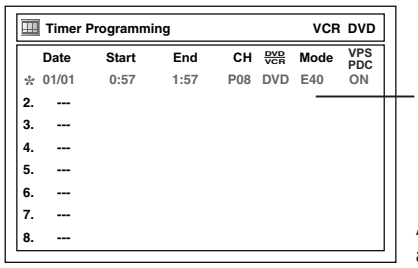
Note: If an error occurs, a message with the error number appears on the screen.



Message	Solution	Error No.	Error Description	Priority
Can not record on this disc.	Insert the recordable disc, and ensure the disc status satisfies the recording requirements.	1	An error occurs during data reading.	-
		2	There is no reply for 15 seconds in Test Unit Ready.	-
		3	Cannot write the data after trying three times.	-
		4	An error occurs with OPC.	-
		5	During recovery in a record.	-
		6	An error occurs even if recovery has been tried three times.	-
		7	An error occurs in a format.	-
		8	It cannot start an encode.	-
		9	NV_PCK/RDI_PCK is not in encoded data.	-
		10	Encode Pause condition continued for 10 minutes.	-
		11	Encode Pause condition continued in normal REC condition for 10 minutes.	-
		12	Difference in the address and can not get Stream ID of RDI/VIDEO.	-
		13	It is a reply that “ATAPI is not readable.”	-
		14	Cannot write the data after recovering SMALL VMGI.	-
		15	Cannot write the data after DVD-R Reverse Track.	-
		16	An error occurs in Finalize Close.	-
		17	An error occurs in Rec Stop Close.	-
		18	An error occurs in PCA Full (DVD_R).	-
		19	Safety Stop occurs during editing.	-
		20	High Speed Disc.	2
		21	The disc is not formatted.	5
		22	Disc Error has occurred.	3
		23	The -R Disc of VR Mode.	6
		24	The disc except DVD-R/RW or finalized DVD-R.	1
This program is not allowed to be recorded.	You cannot record copy prohibited programs.	25	During the Macrovision picture input.	11
		26	During the CGMS picture input.	12
This program is not recordable in Video mode.	Set “DVD-RW Recording Format” to “VR mode”.	27	During the CGMS picture (possible to record once) input. (Video Format Disc)	12
This program is not allowed to be recorded on this disc.	Insert a ver.1.1 CPRM compatible DVD-RW disc.	28	During the CGMS picture (possible to record once) input. (Disc which is not for the correspondence to VR Format CPRM)	12

Message	Solution	Error No.	Error Description	Priority
This disc is protected and not recordable.	Release the disc protect setting in the Disc Setting menu.	29	Disc Protected Disc.	7
Disc is full. (No area for new recording)	Insert the recordable disc with enough recording space.	30	No available recording space.	5
You cannot record more than 99 titles on one disc. (The maximum is 99.)	Delete unnecessary titles.	31	Its recording capacity has been reached. (Video Format Disc)	7
		32	Its recording capacity has been reached. (VR Format Disc)	8
You cannot record more than 999 chapters on one disc. (The maximum is 999.)	Delete unnecessary chapter markers.	33	The 999 chapter has been reached. (VR Format Disc)	9
You cannot record on this disc as Control Information is full.	Delete unnecessary titles.	34	There is not space to record field of control information.	10
You cannot record on the disc as Power Calibration Area is full.	Insert a new disc.	35	PCA is Full. (in REC start)	4
This disc is already finalized.	Release the finalizing for this disc.	36	It is finalized. (Video Format Disc)	6
Can not record on this disc.	Repeat the same operation.	37	Access to Memory Area range outside.	-
		38	Sector Address is wrong.	-
		39	BUP writing error of chapter editing.	-
You cannot record more than 49 titles on one disc.(The maximum is 49.)	Delete unnecessary titles.	43	The 49 titles has been reached. (+VR Format)	9
You cannot record more than 254 chapters on one disc.(The maximum is 254.)	Delete unnecessary chapter marks.	44	The 254 chapter has been reached. (+VR Format Disc)	10
This program is not recordable in +VR mode.	Set “DVD-RW Recording Format” to “VR mode”.	45	During the CGMS picture (possible to record once) input. (+VR Format Disc)	12
The disc has no recording compatibility. (Set “Make Recording Compatible” to “ON” to convert the disk.)	Please make the “Make Recording Compatible“ setting “ON“ when you want to add a postscript.	46	A postscript tried to be added to + VR Format Disc where different Title Menu from this machine when the Make Recording Compatible setting was turned off was recorded.	7

If an error occurs during the timer recording, one of the following error numbers (40 to 42) or the above error messages (error number: 1 to 39 and 43 to 46) is displayed on the recording menu after timer recording.
(Once the screen of the program line is exited, the program line for the error will be cleared.)
(No Error Message is displayed for the error No. 40 ~ 42.)

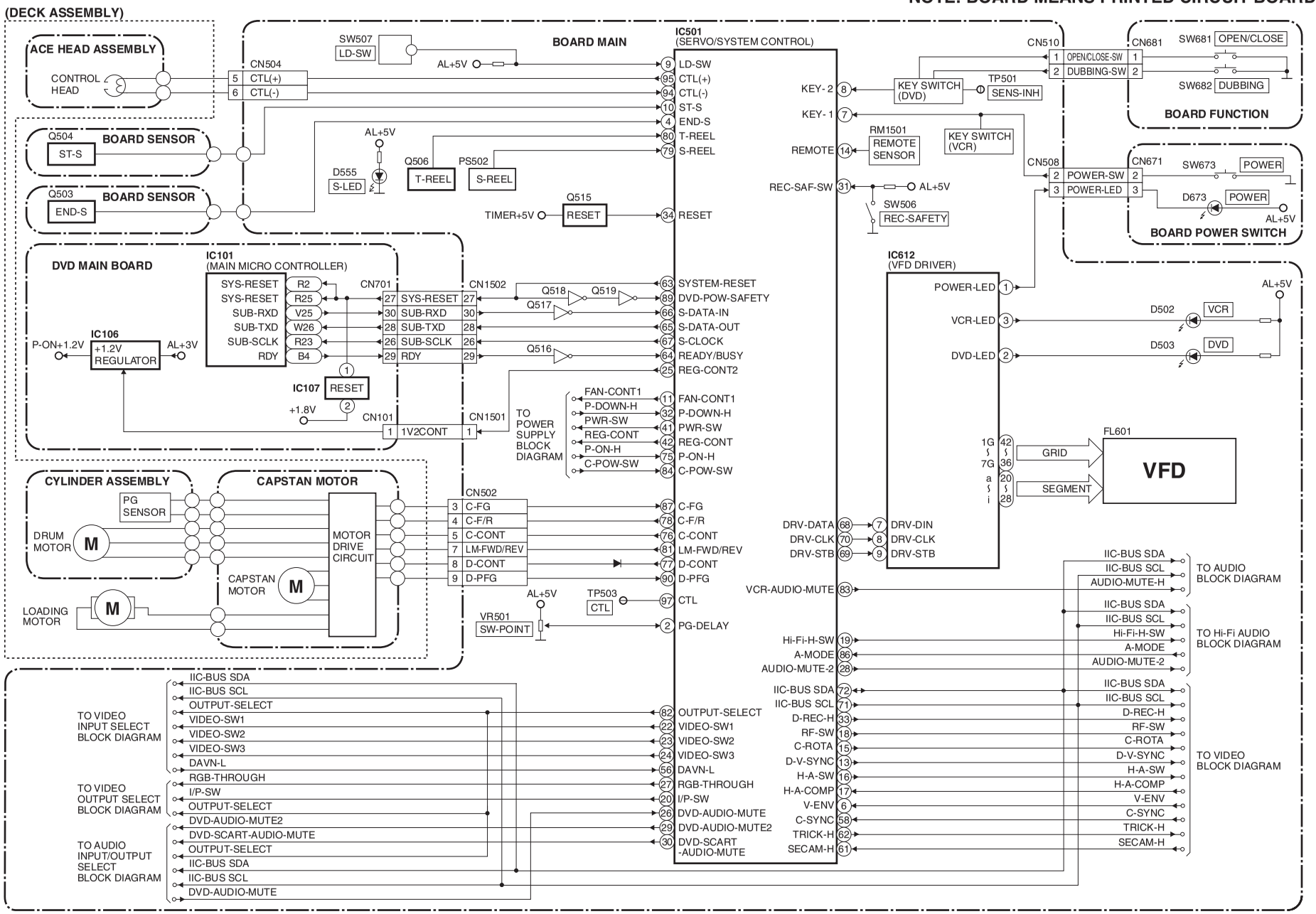

Timer Programming
VCR DVD
Date Start End CH DVD VCR Mode VPS PDC
✲ 01/01 0:57 1:57 P08 DVD E40 ON
2. ---
3. ---
4. ---
5. ---
6. ---
7. ---
8. ---
The speed mode changes to the error number.
A program with the error number is grayed out and asterisked on the timer programming list.

Message	Solution	Error No.	Error Description	Priority
Error message is not displayed.	- Set the timer programming correctly. - Set the timer programming before the start time. - Insert a recordable videotape with a record tab.	40	- Some portion has not been recorded because of program overlapping. - Recording did not start at the start time. - No Videotape is inserted. Videotape ran out during recording.	-
	Turn the power on and set the clock correctly then set timer programming again.	41	Power failed	-
	Insert the recordable disc.	42	No disc when recording	-

BLOCK DIAGRAMS

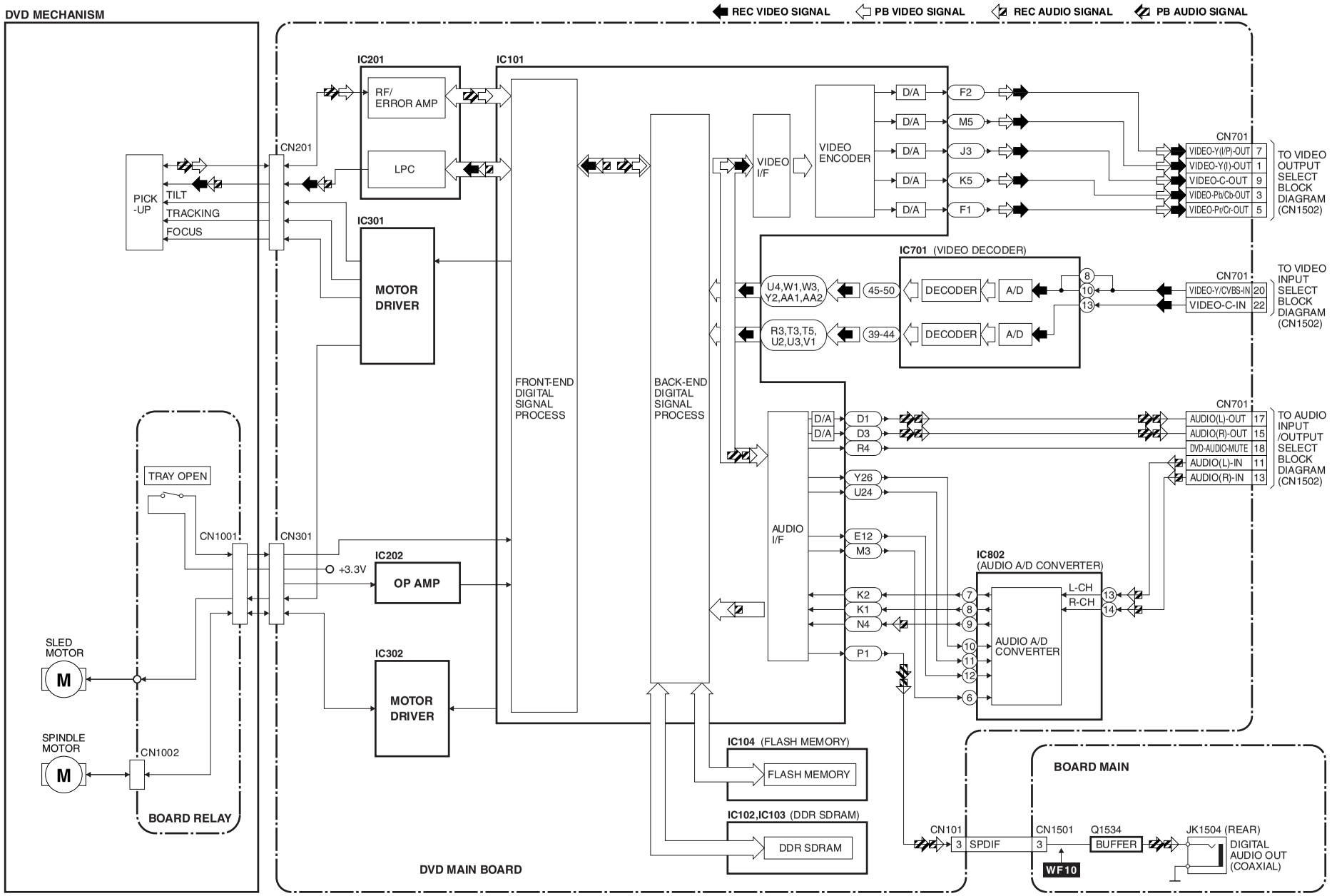
Servo/System Control Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



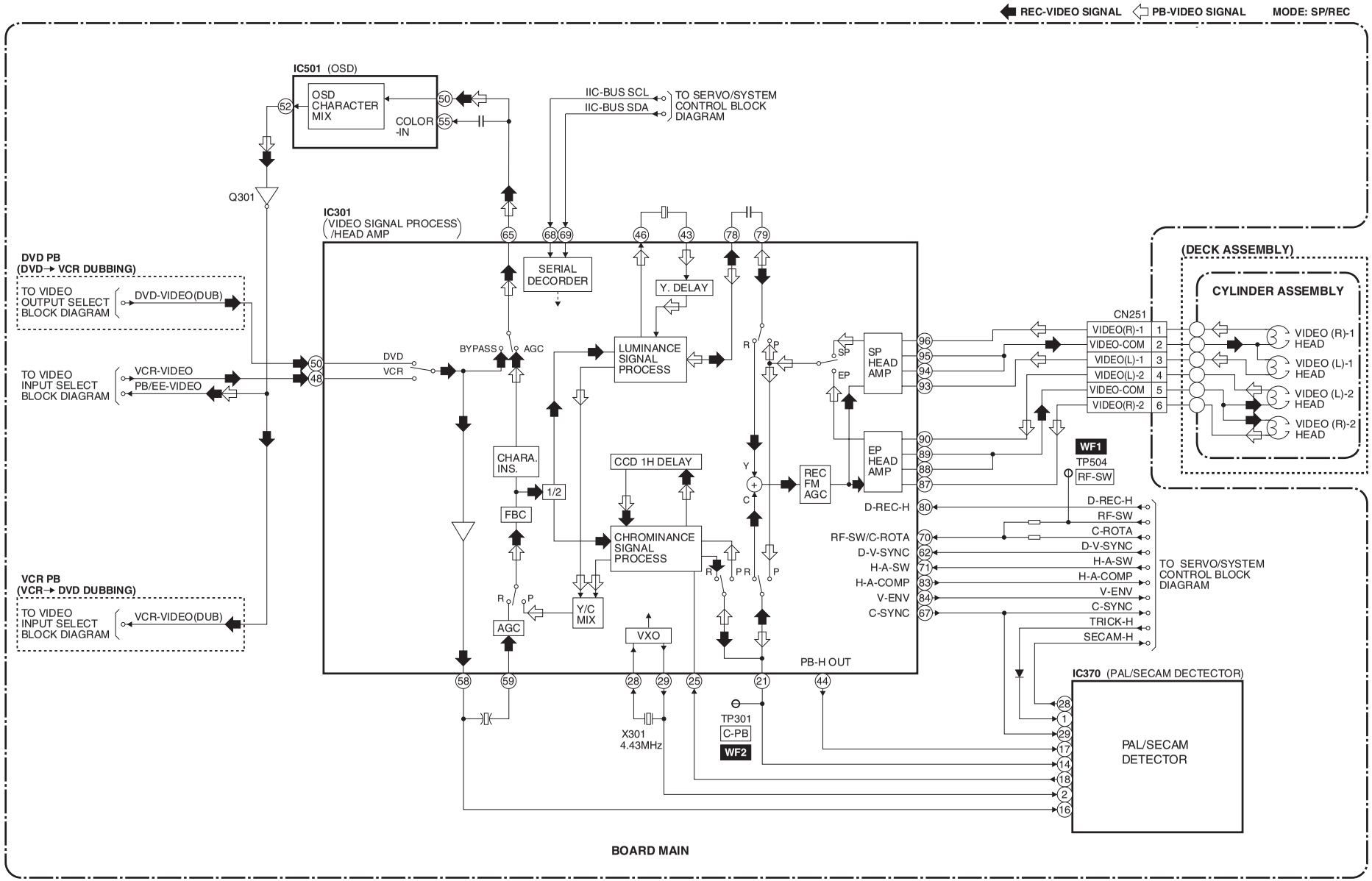
Digital Signal Process Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



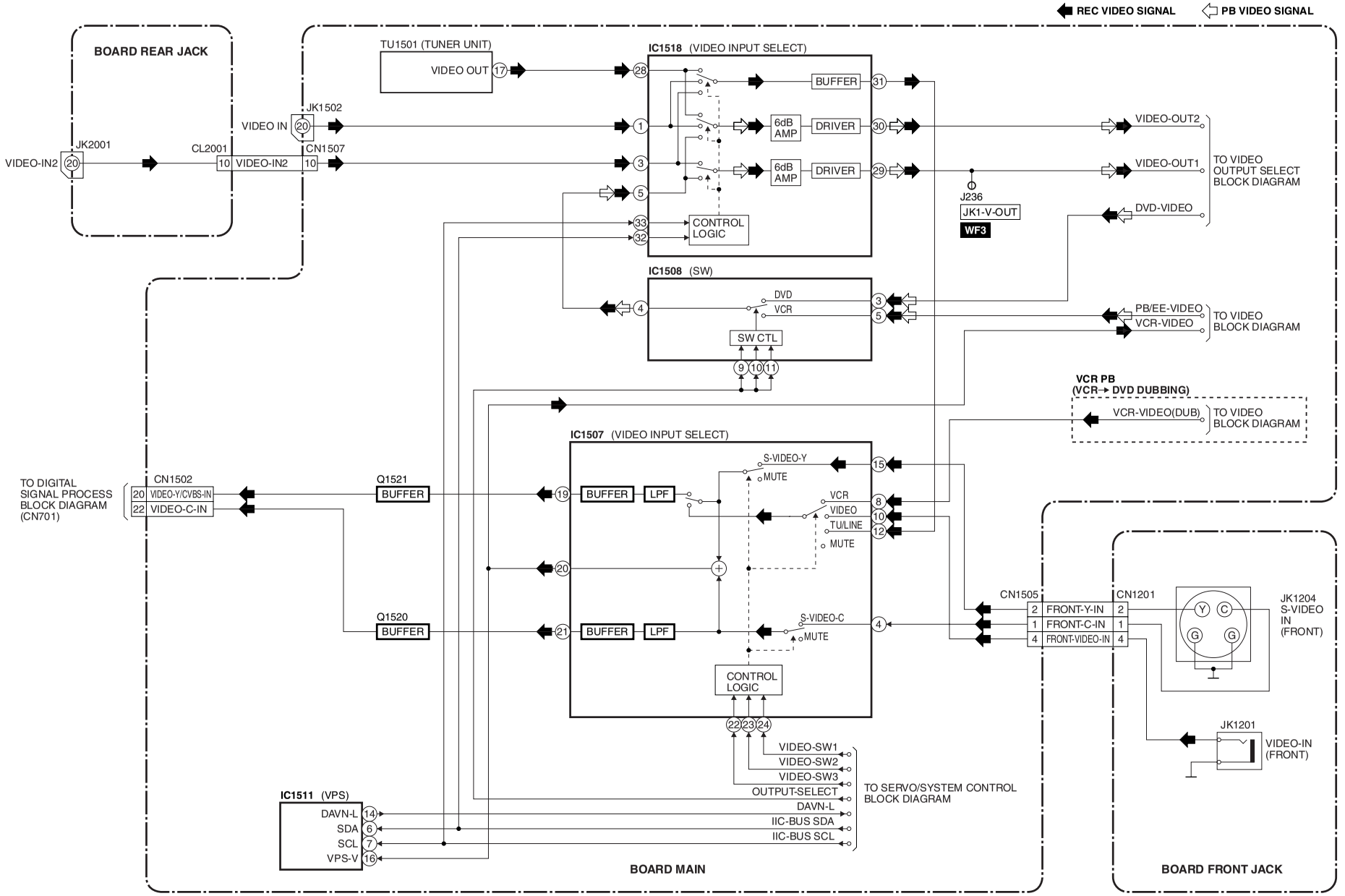
Video Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



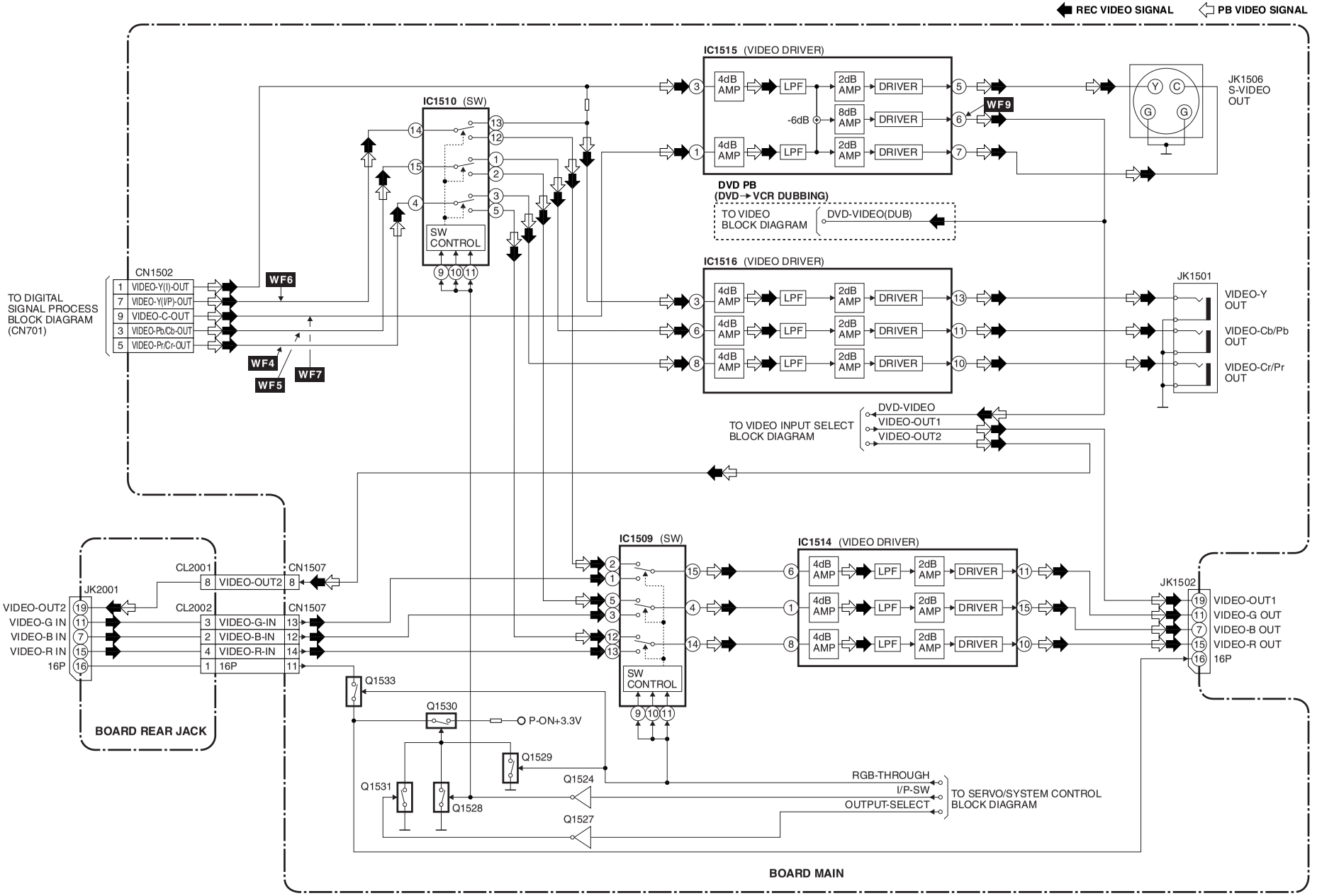
Video Input Select Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



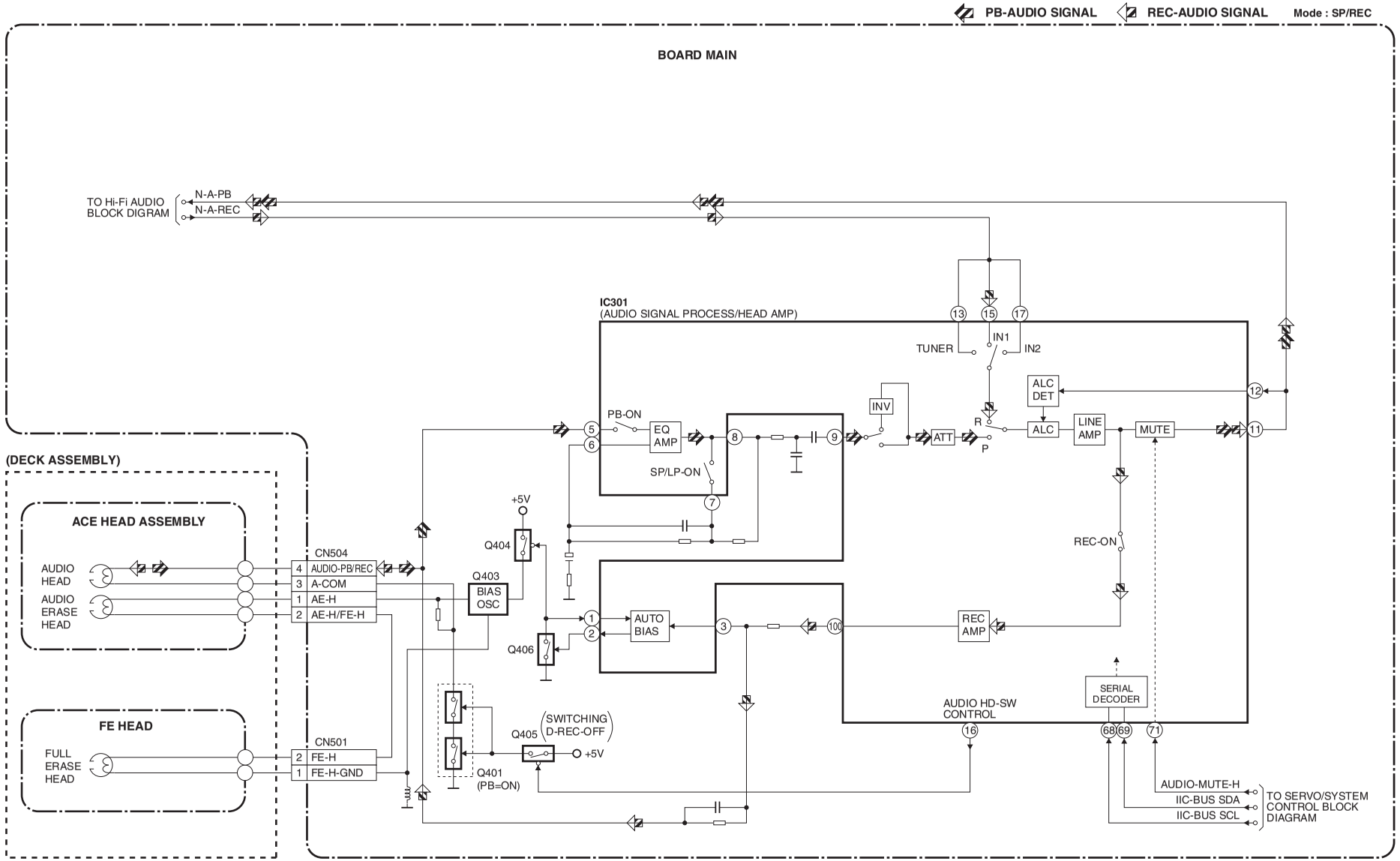
Video Output Select Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



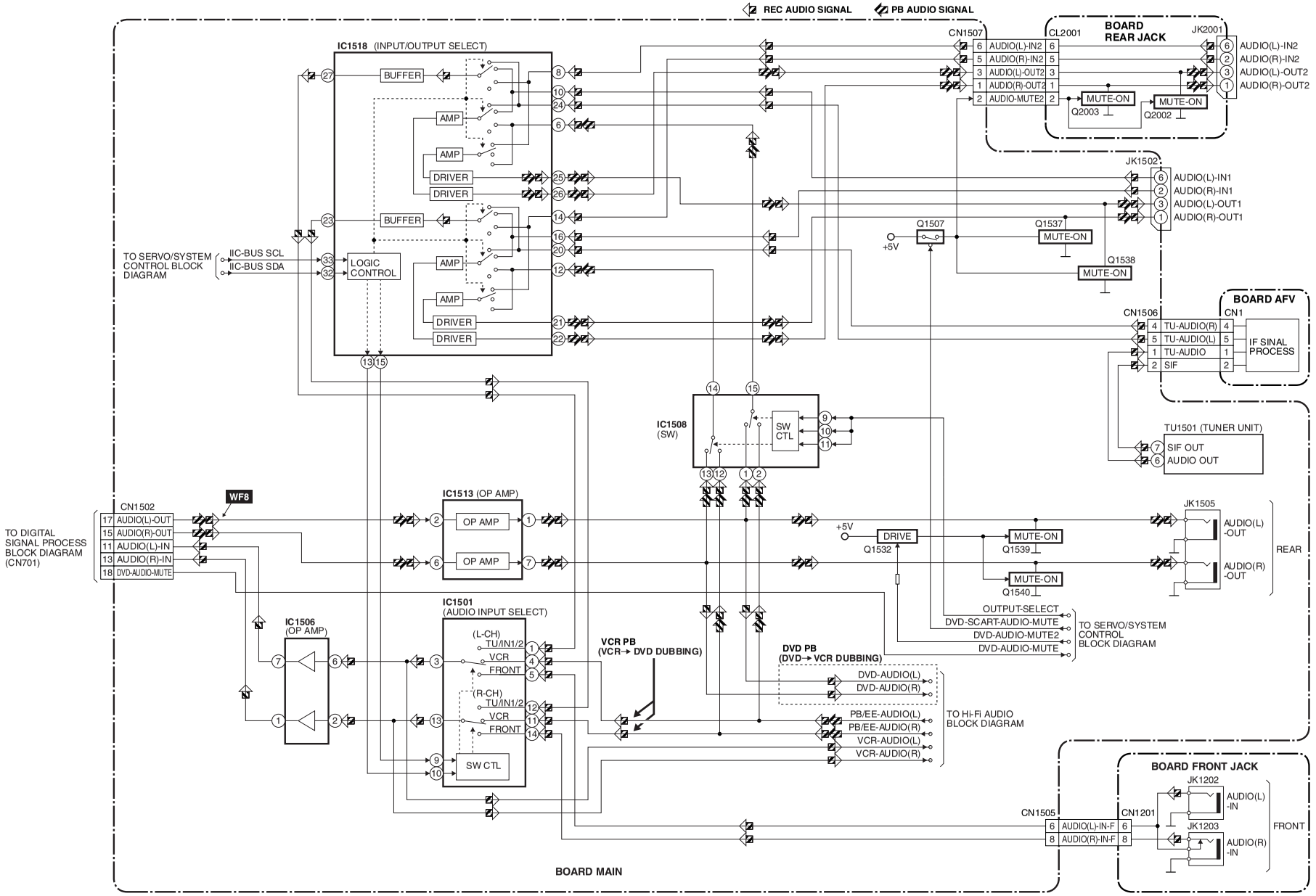
Audio Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



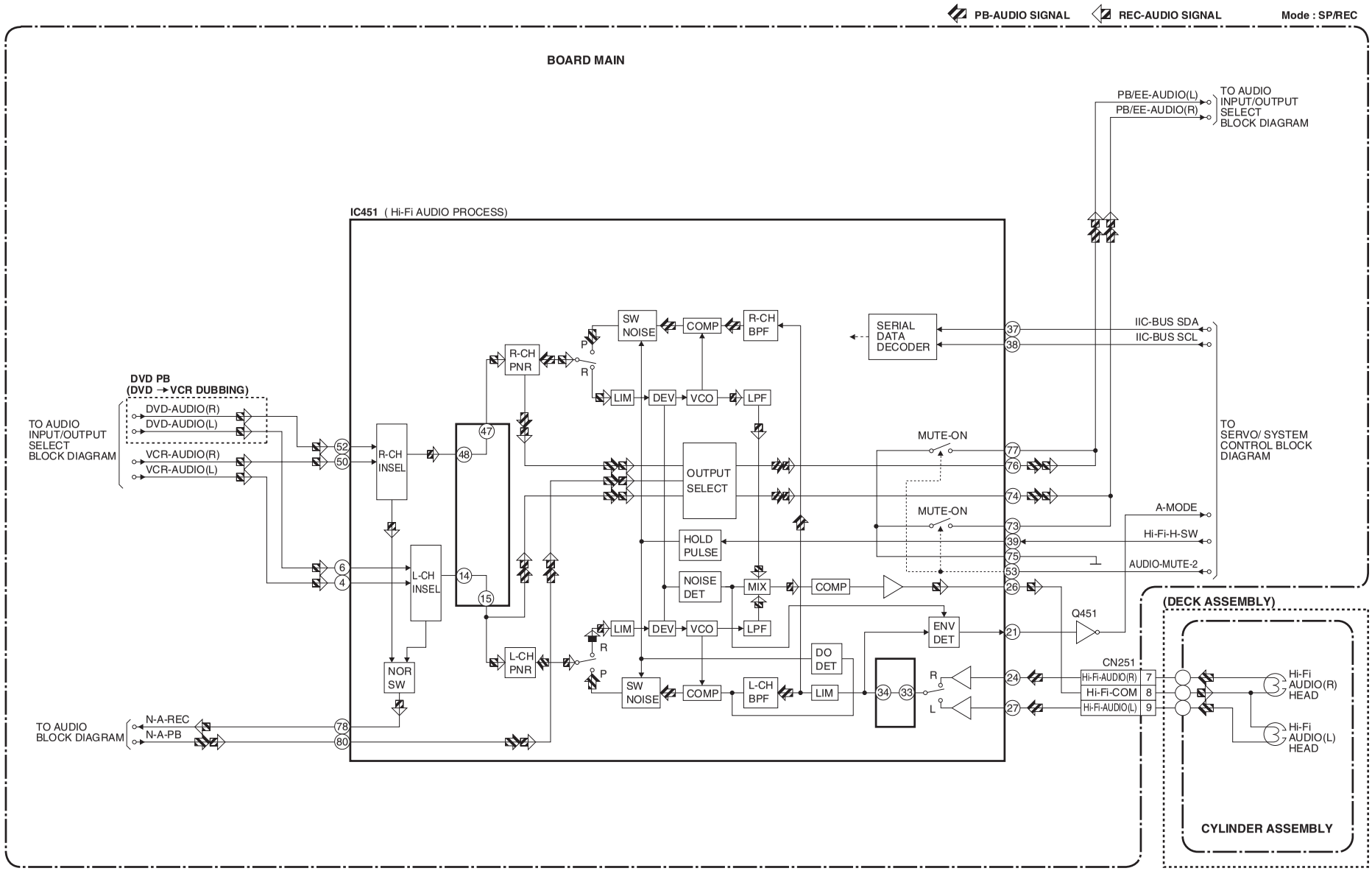
Audio Input/Output Select Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



Hi-Fi Audio Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



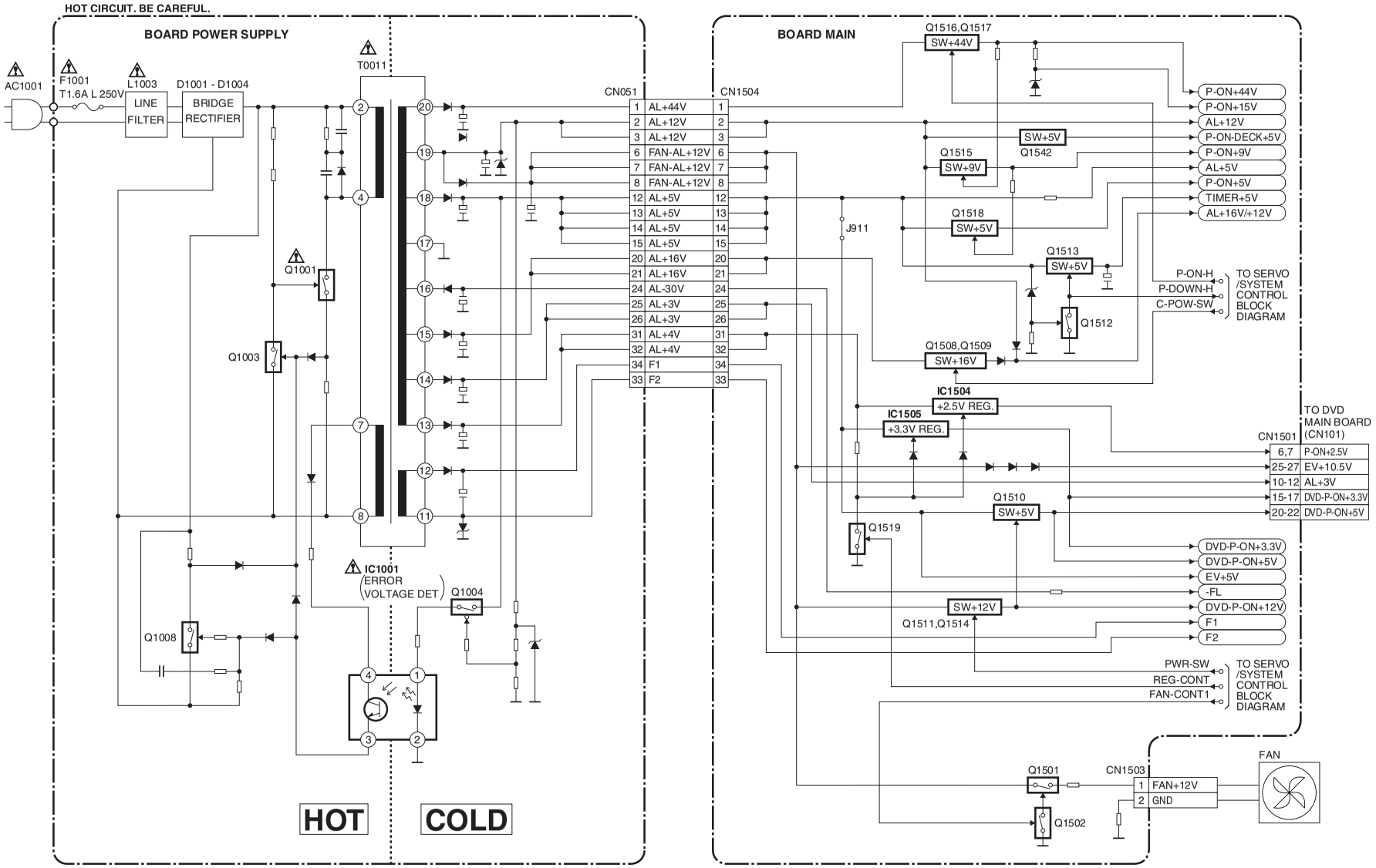
Power Supply Block Diagram

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



SCHEMATIC DIAGRAMS / BOARD'S AND TEST POINTS

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

Standard Notes

WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.
6. Electrical parts such as capacitors, connectors, diodes, IC's, transistors, resistors, switches, and fuses are identified by four digits. The first two digits are not shown for each component. In each block of the diagram, there is a note such as shown below to indicate these abbreviated two digits.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.

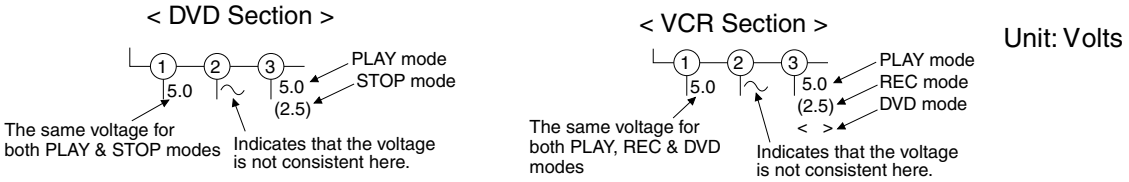
2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

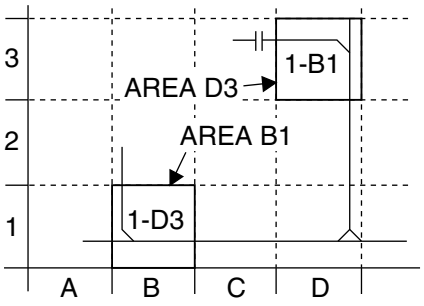
4. Voltage indications for PLAY and REC modes on the schematics are as shown below:



5. How to read converged lines

1-D3
- Distinction Area
- Line Number (1 to 3 digits)

Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



6. Test Point Information

: Indicates a test point with a jumper wire across a hole in the BOARD.

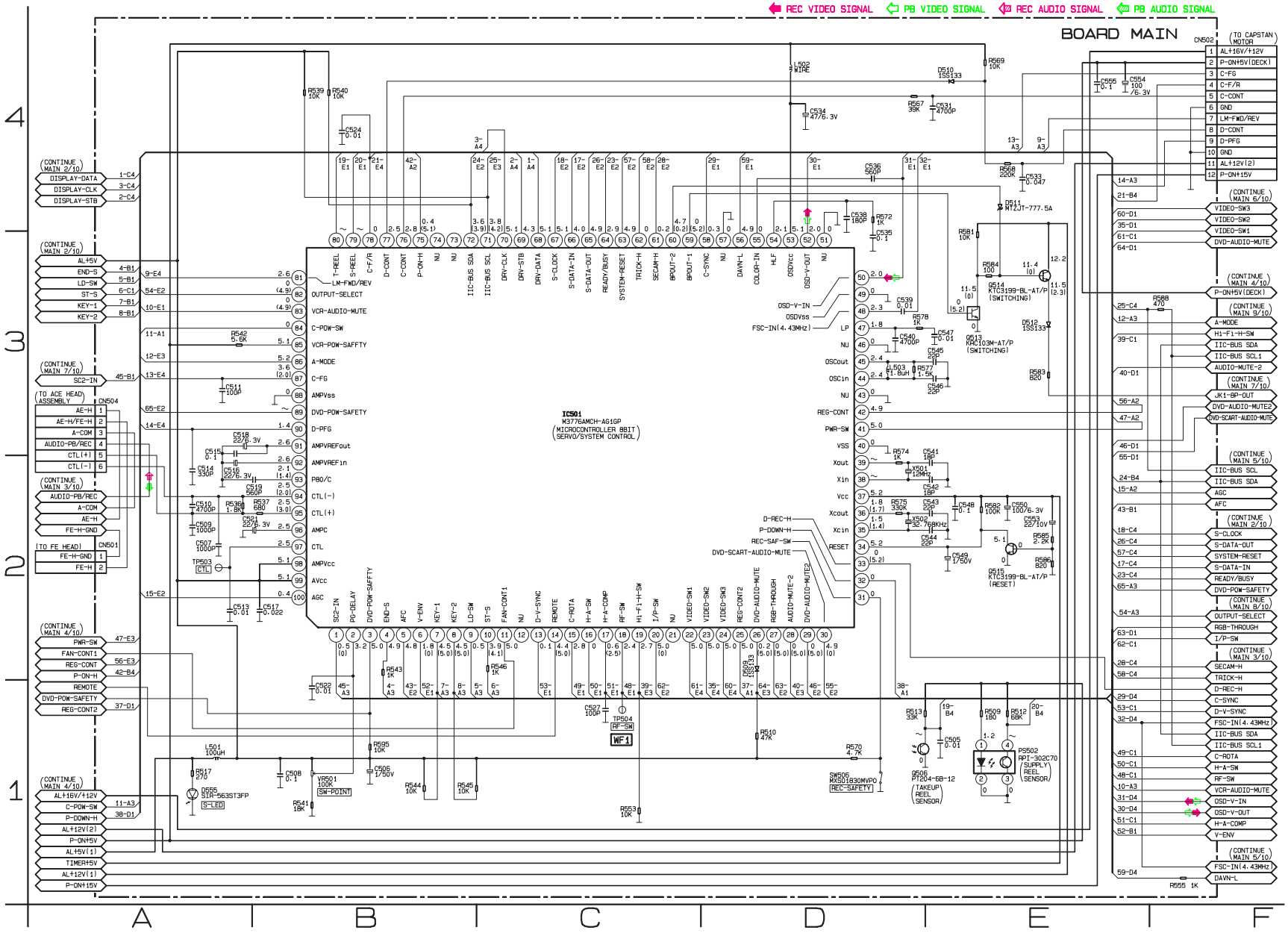
: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

MAIN 1/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

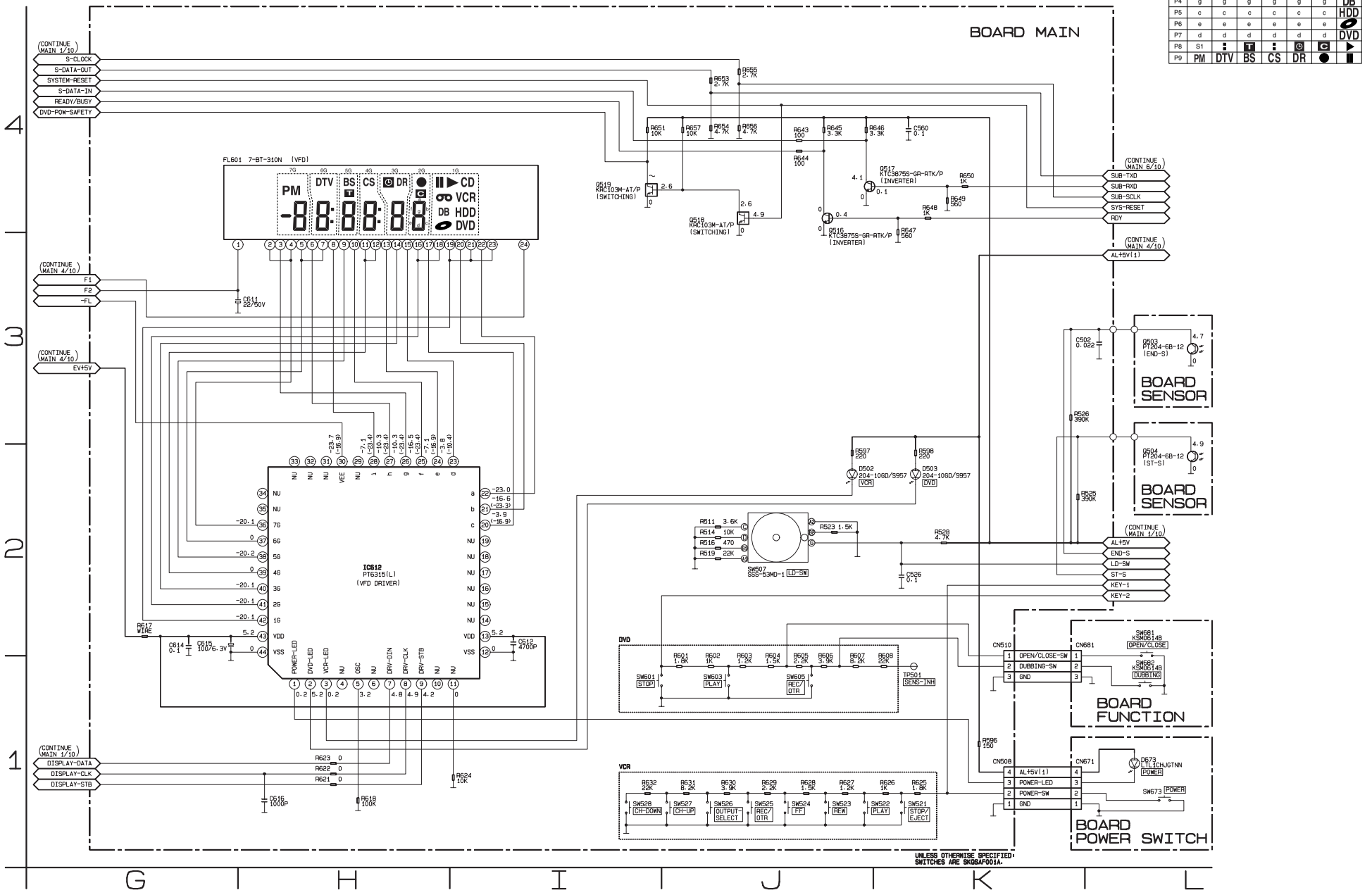


MAIN 2/10, POWER SWITCH, FUNCTION & SENSOR Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

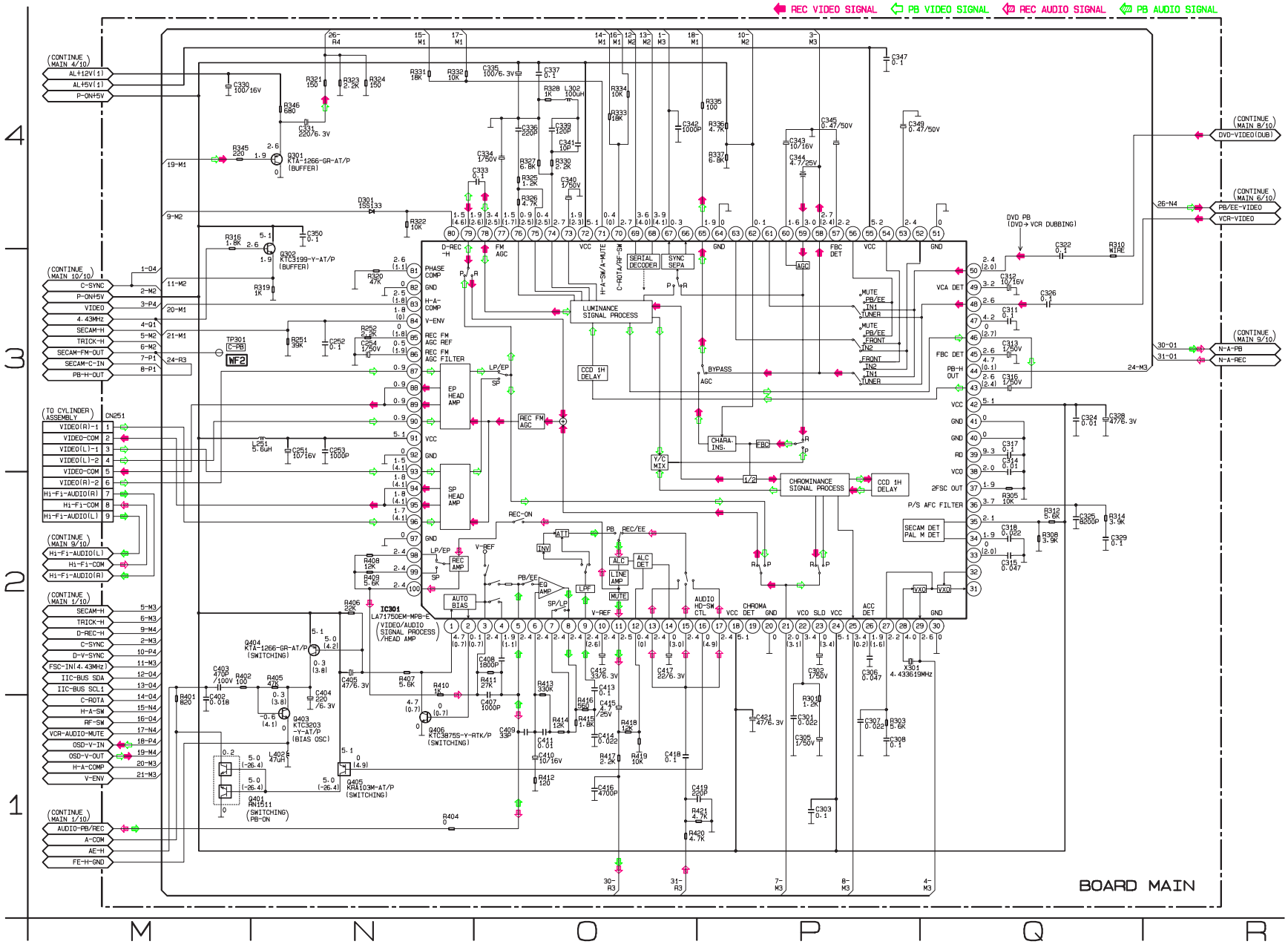
FL601 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
P1	a	a	a	a	a	a	CD
P2	b	b	b	b	b	b	
P3	f	f	f	f	f	f	VCR
P4	g	g	g	g	g	g	DB
P5	c	c	c	c	c	c	HDD
P6	e	e	e	e	e	e	
P7	d	d	d	d	d	d	DVD
P8	S1	:	T	:		C	▶
P9	PM	DTV	BS	CS	DR	●	■



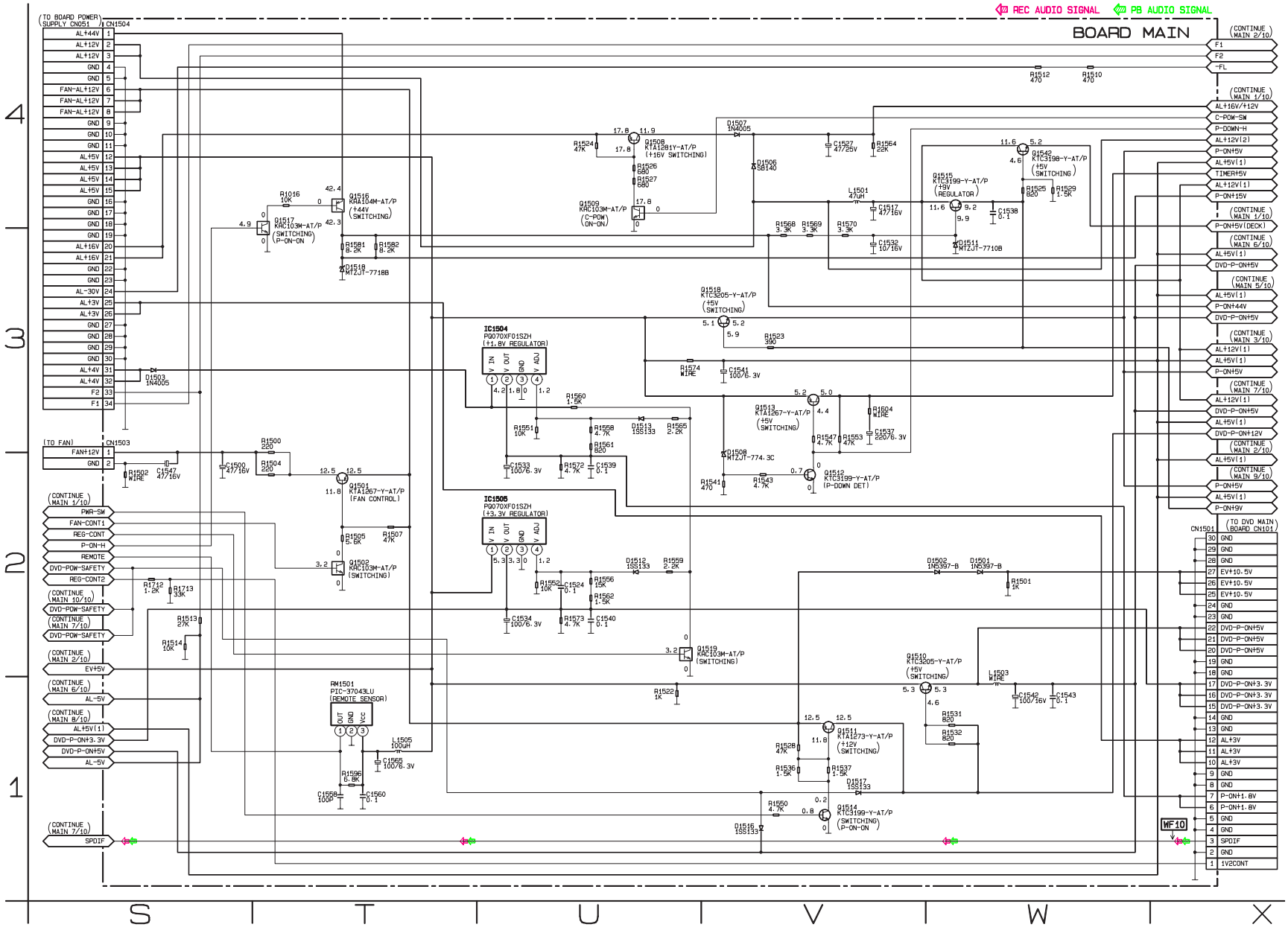
MAIN 3/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



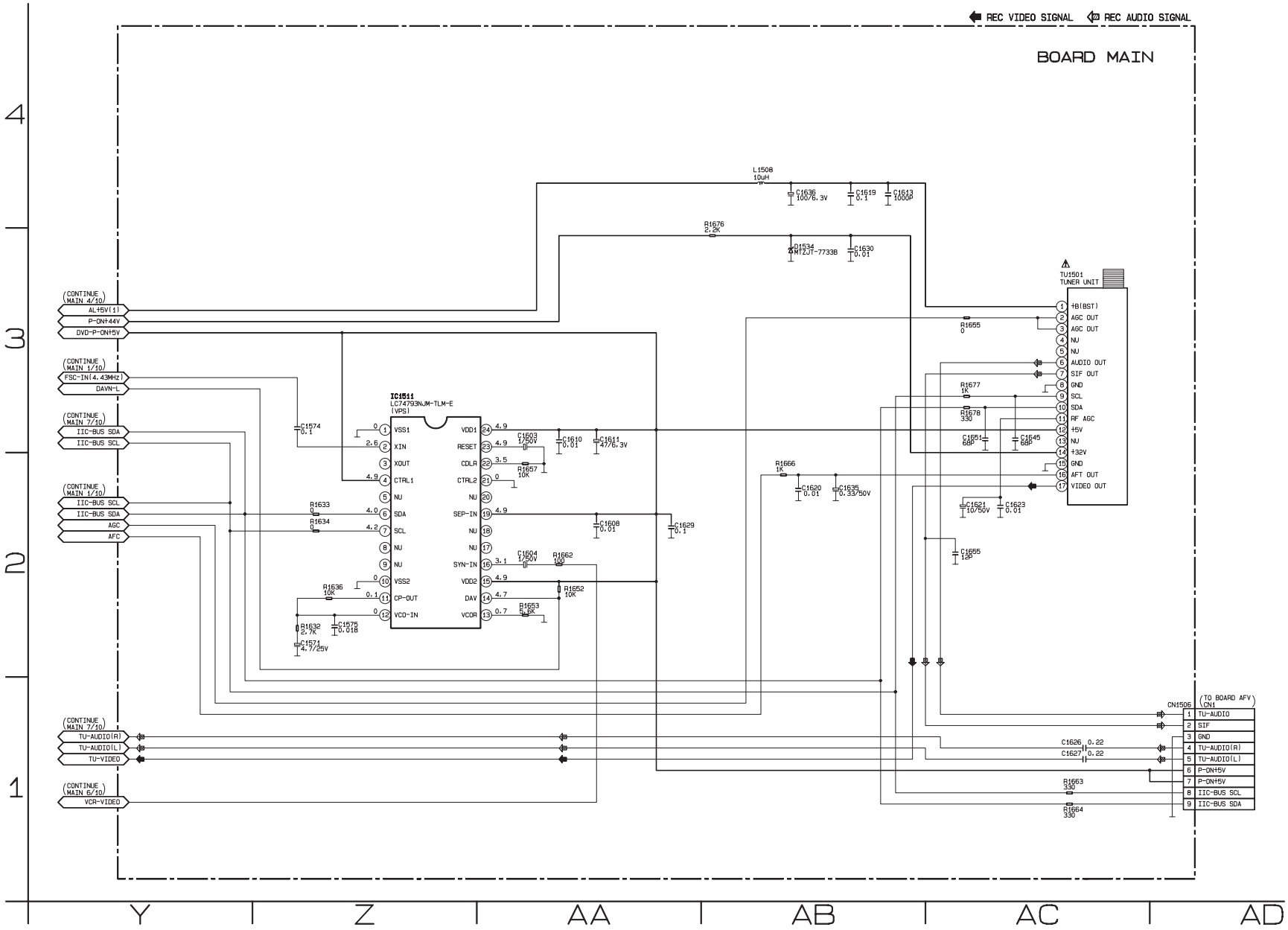
MAIN 4/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



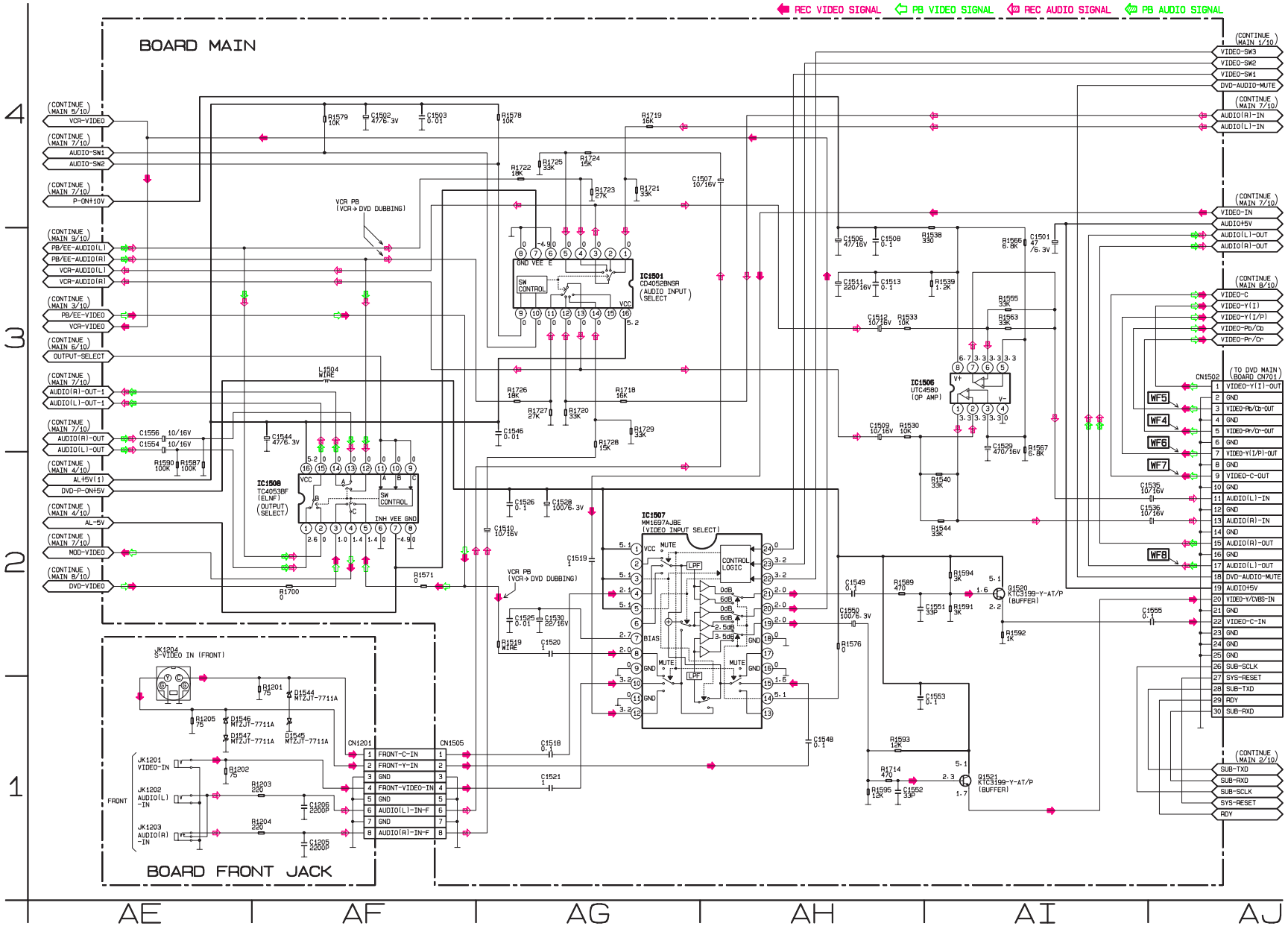
MAIN 5/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



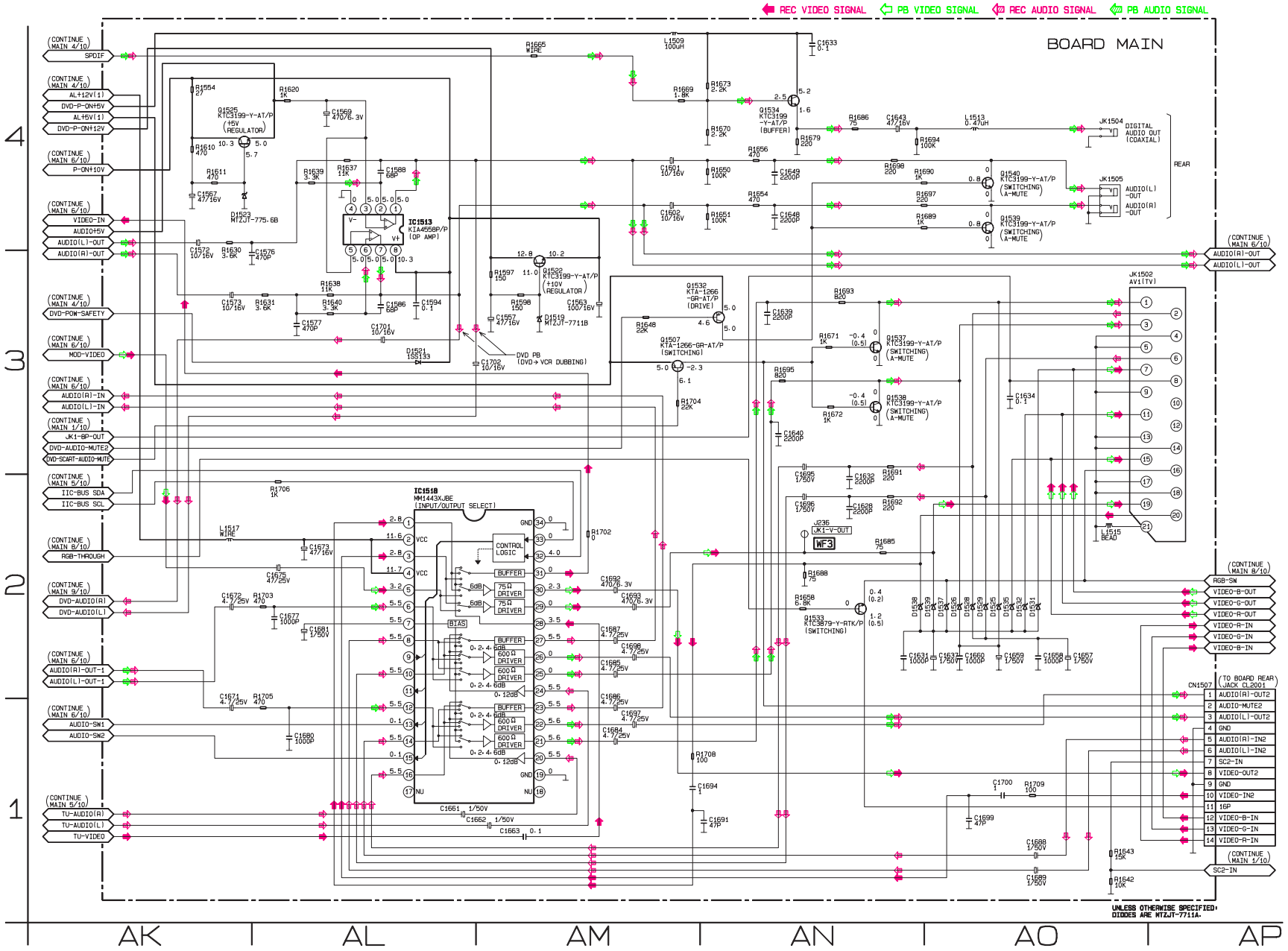
MAIN 6/10 & FRONT JACK Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



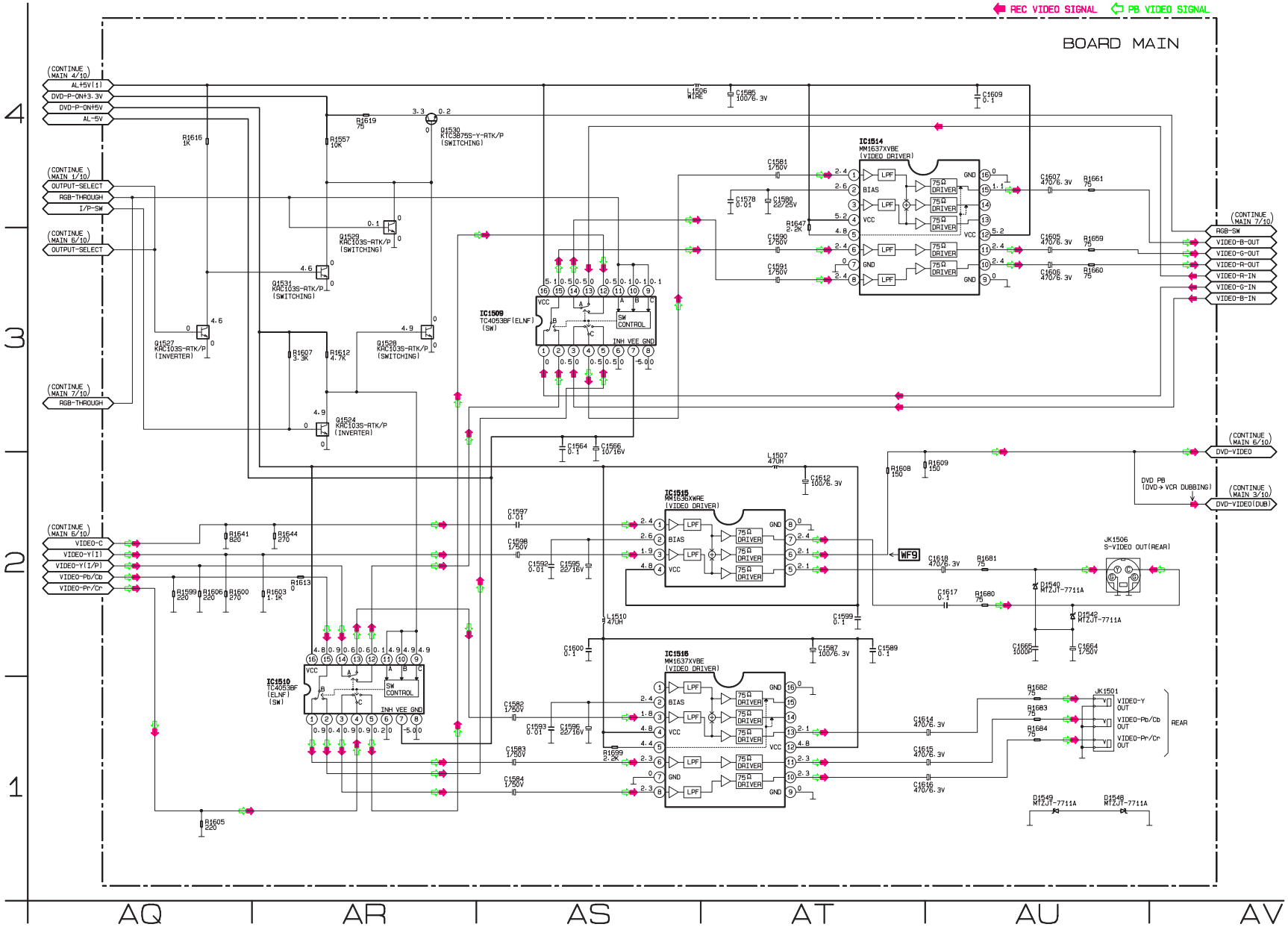
MAIN 7/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



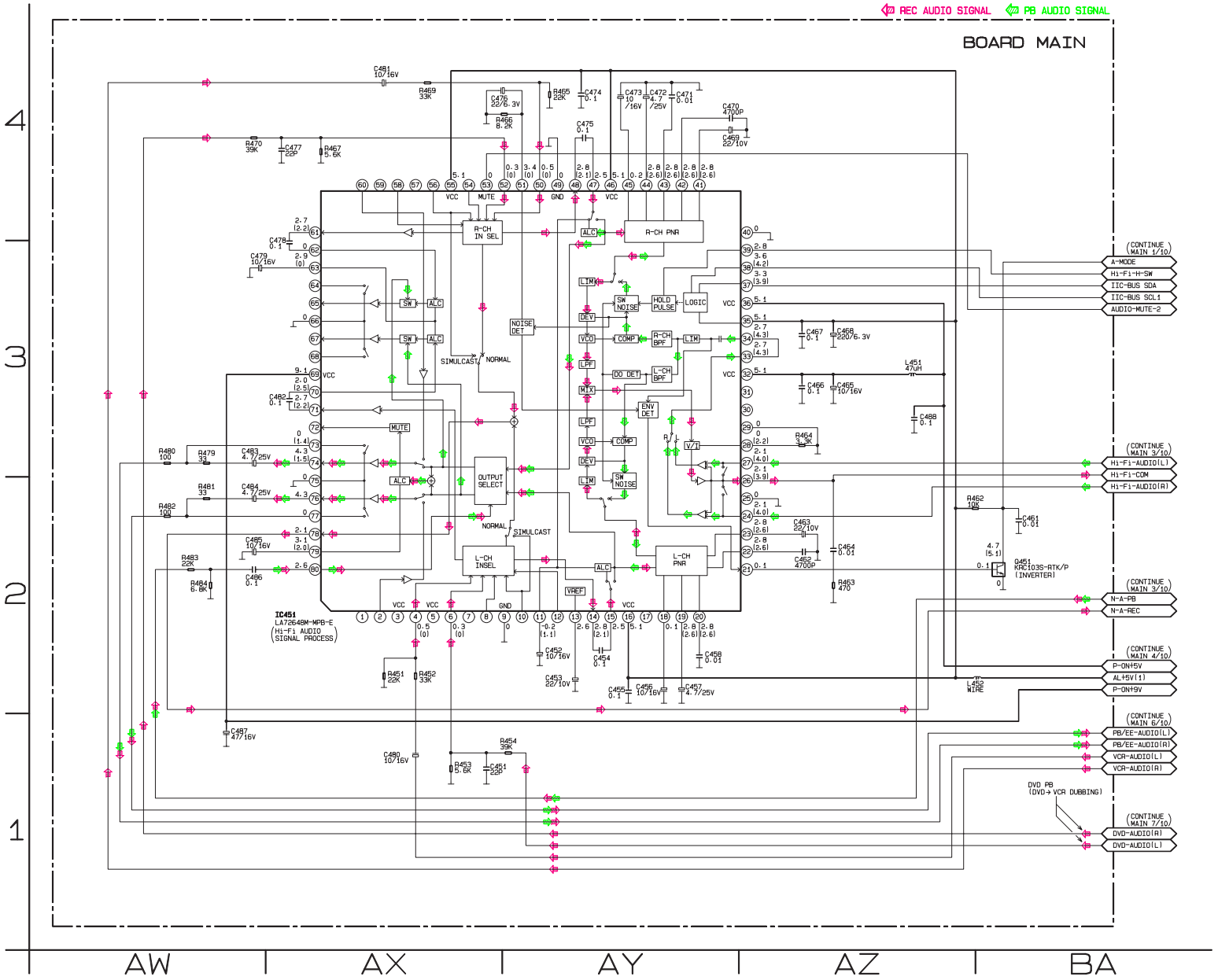
MAIN 8/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

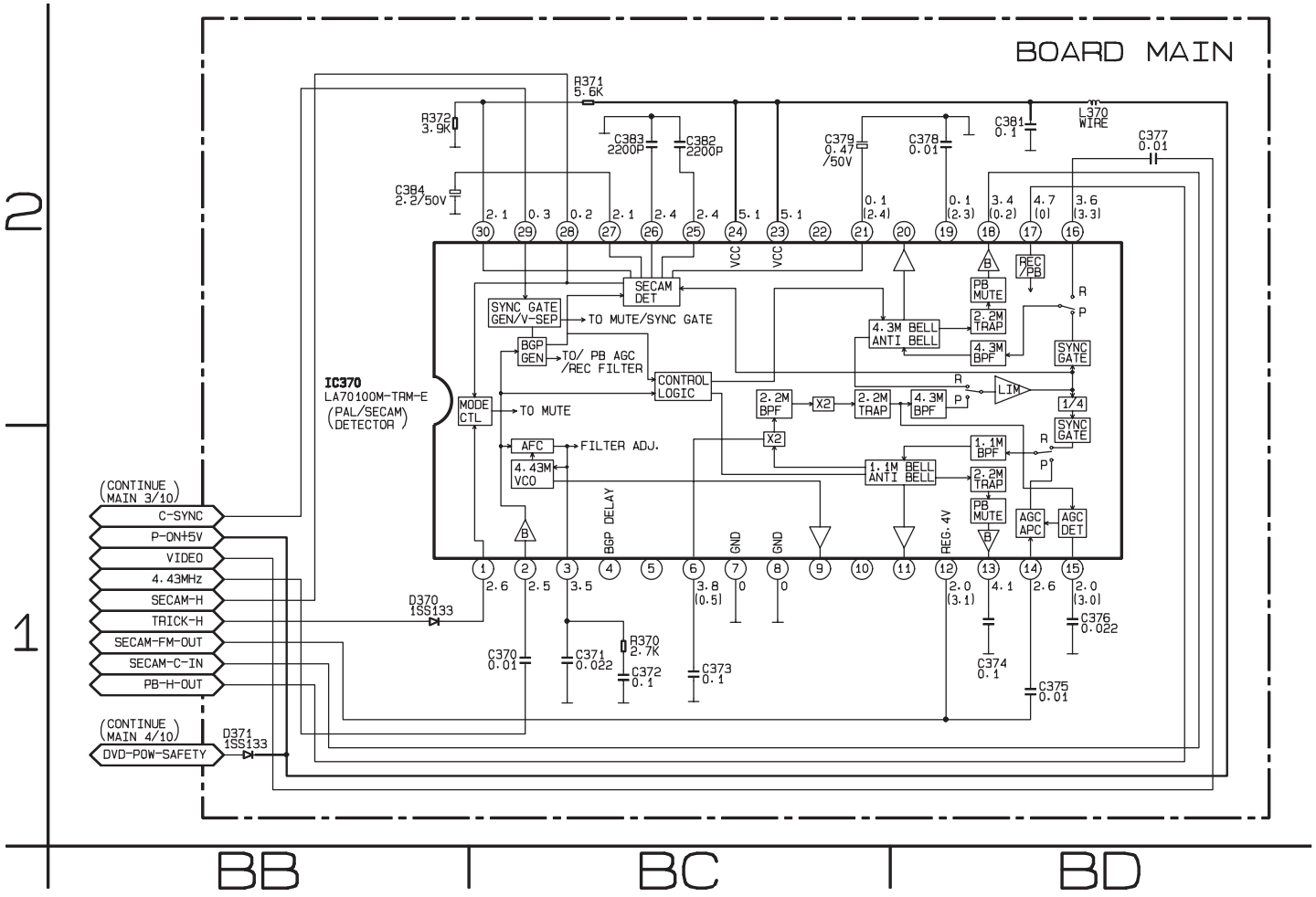


MAIN 9/10 Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



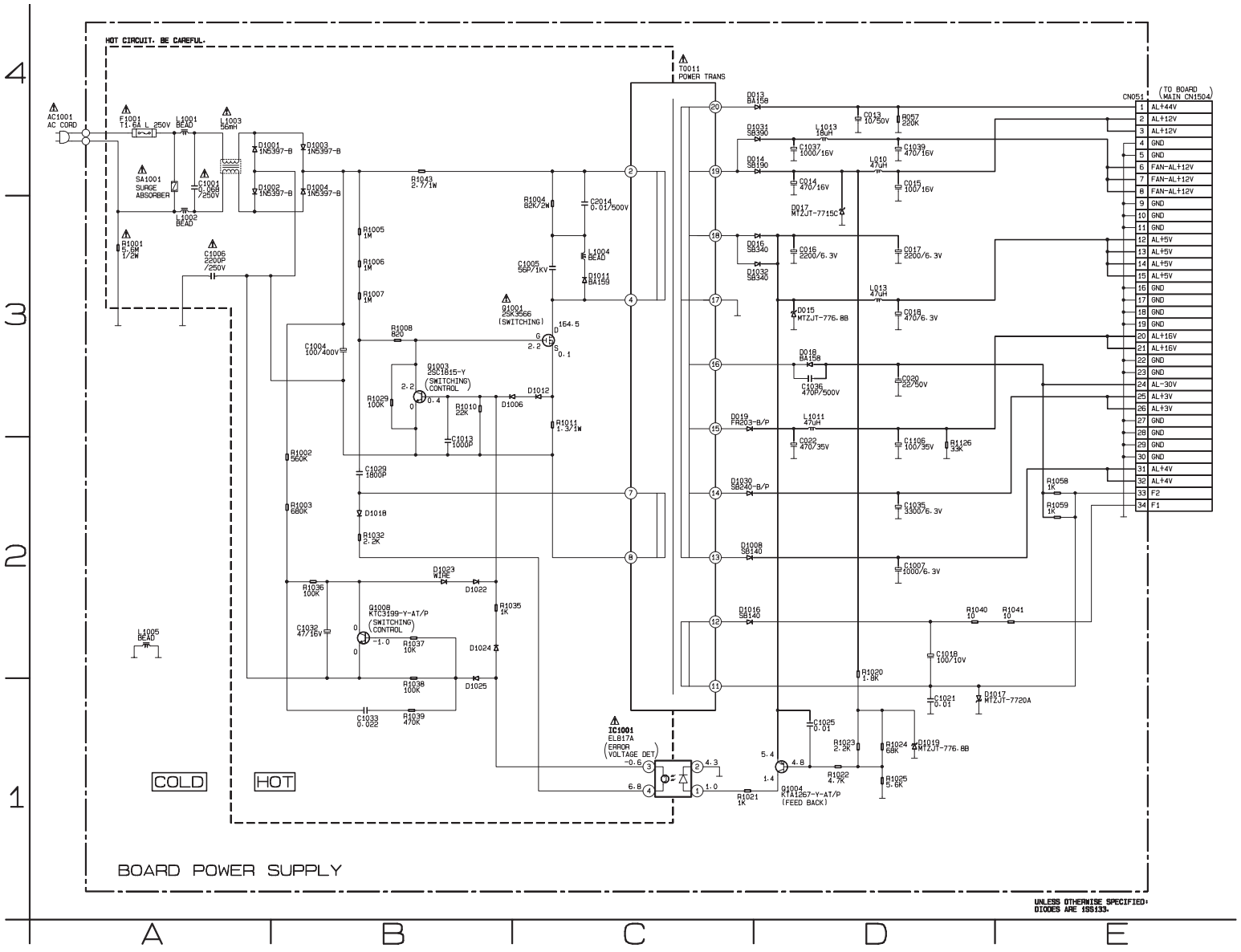
POWER SUPPLY Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

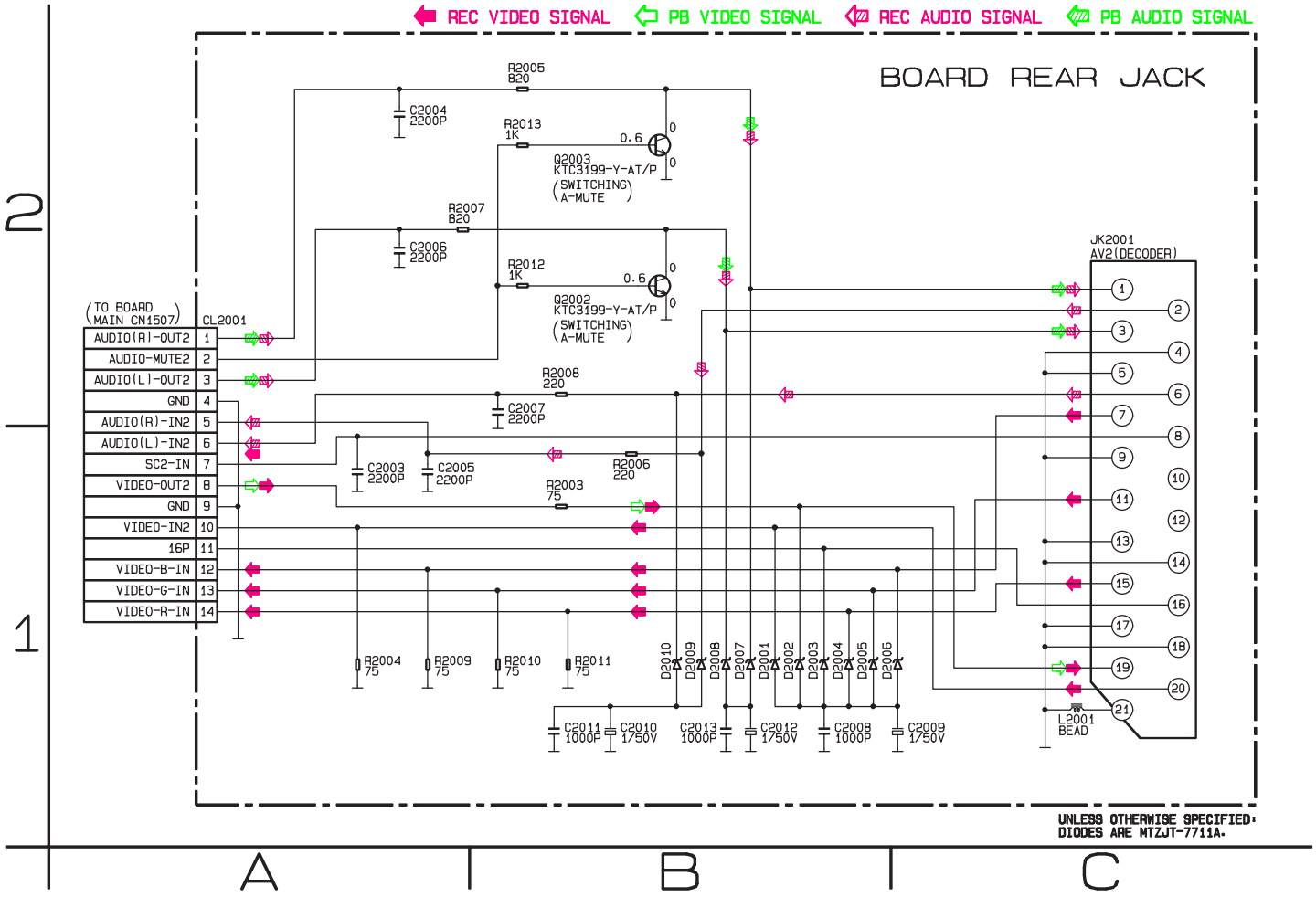
CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



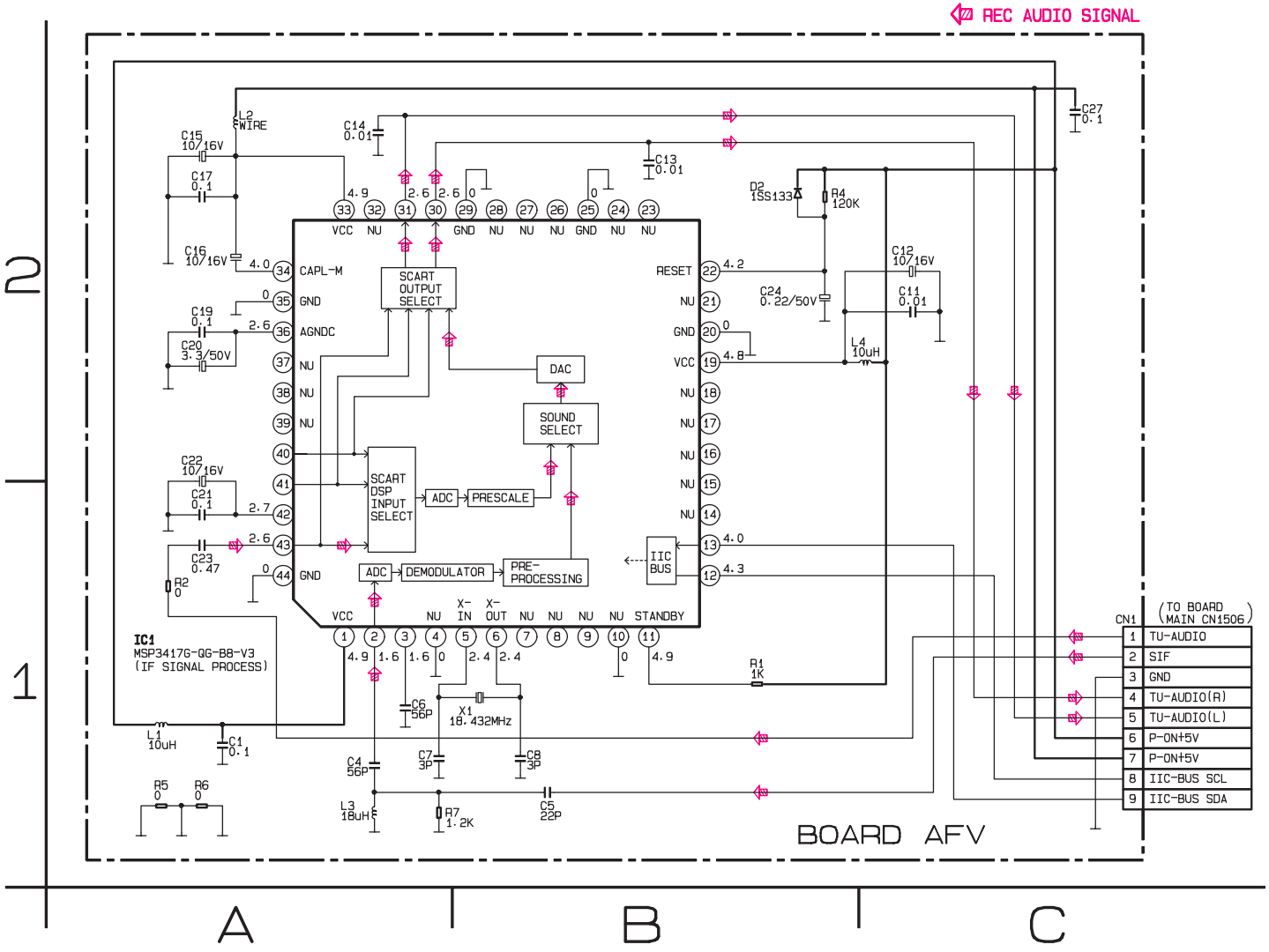
REAR JACK Schematic Diagram < VCR Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



AFV Schematic Diagram < VCR Section >

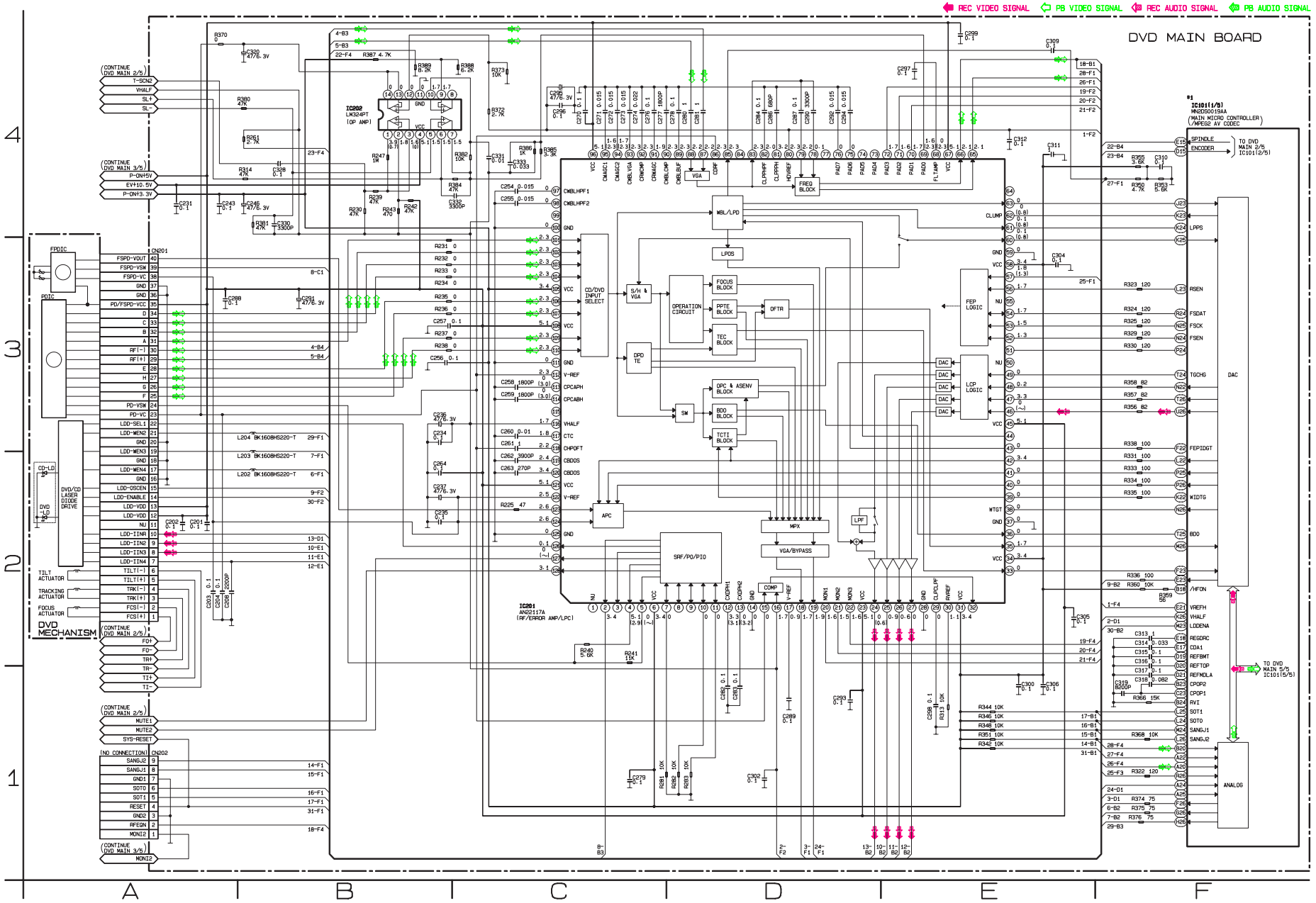
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



DVD MAIN 1/5 Schematic Diagram < DVD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

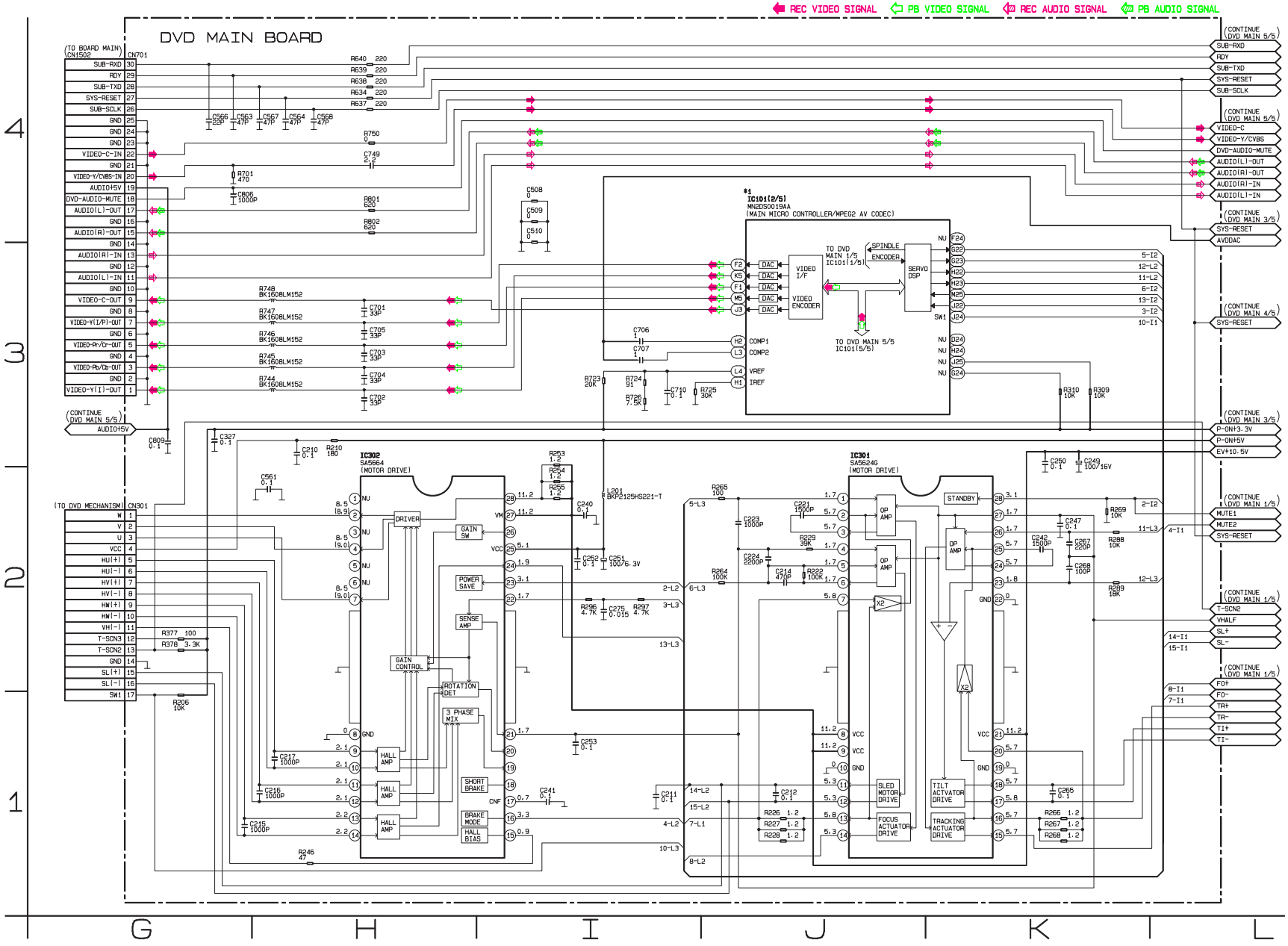
*1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



DVD MAIN 2/5 Schematic Diagram < DVD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

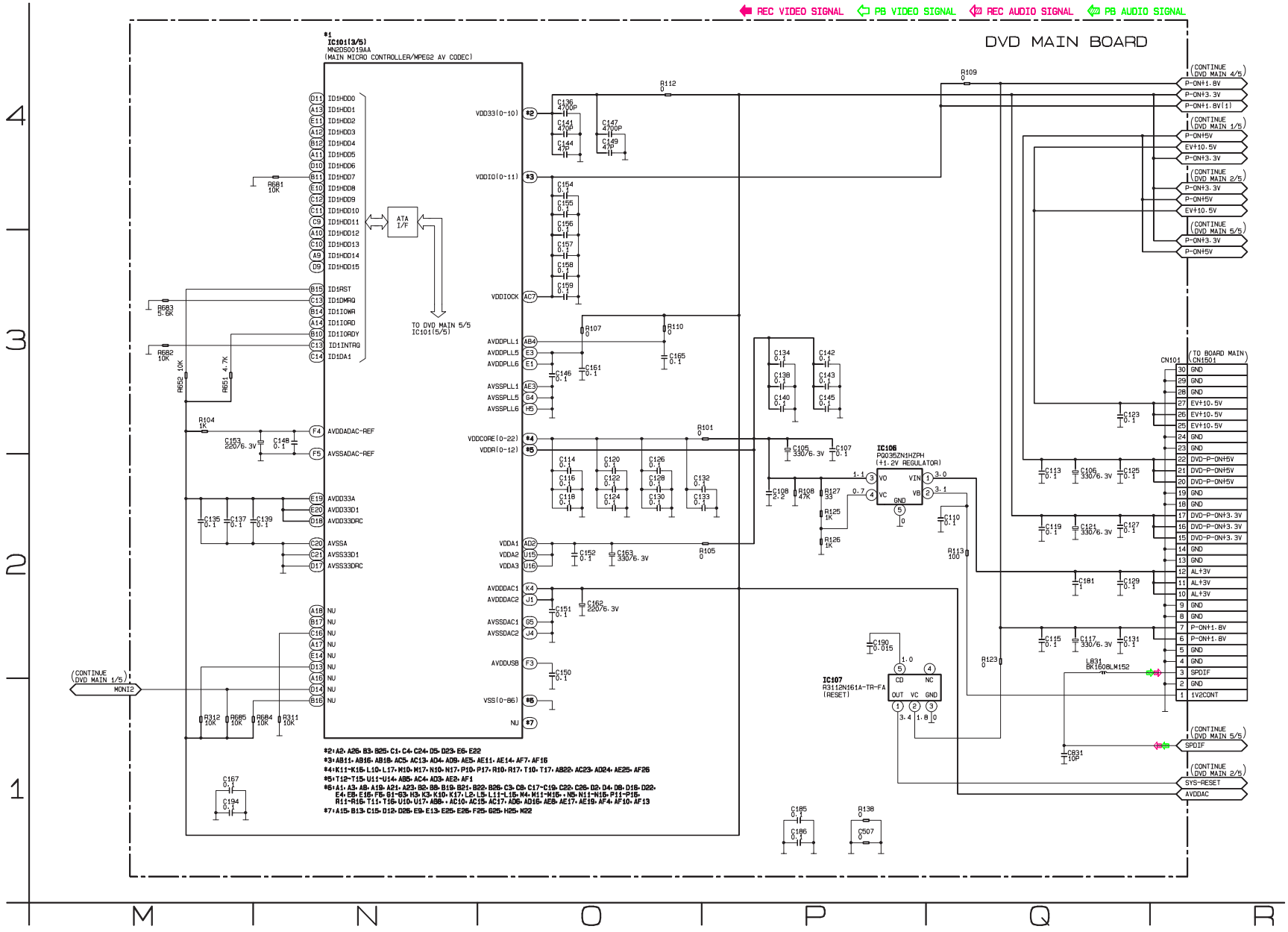
∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



DVD MAIN 3/5 Schematic Diagram < DVD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

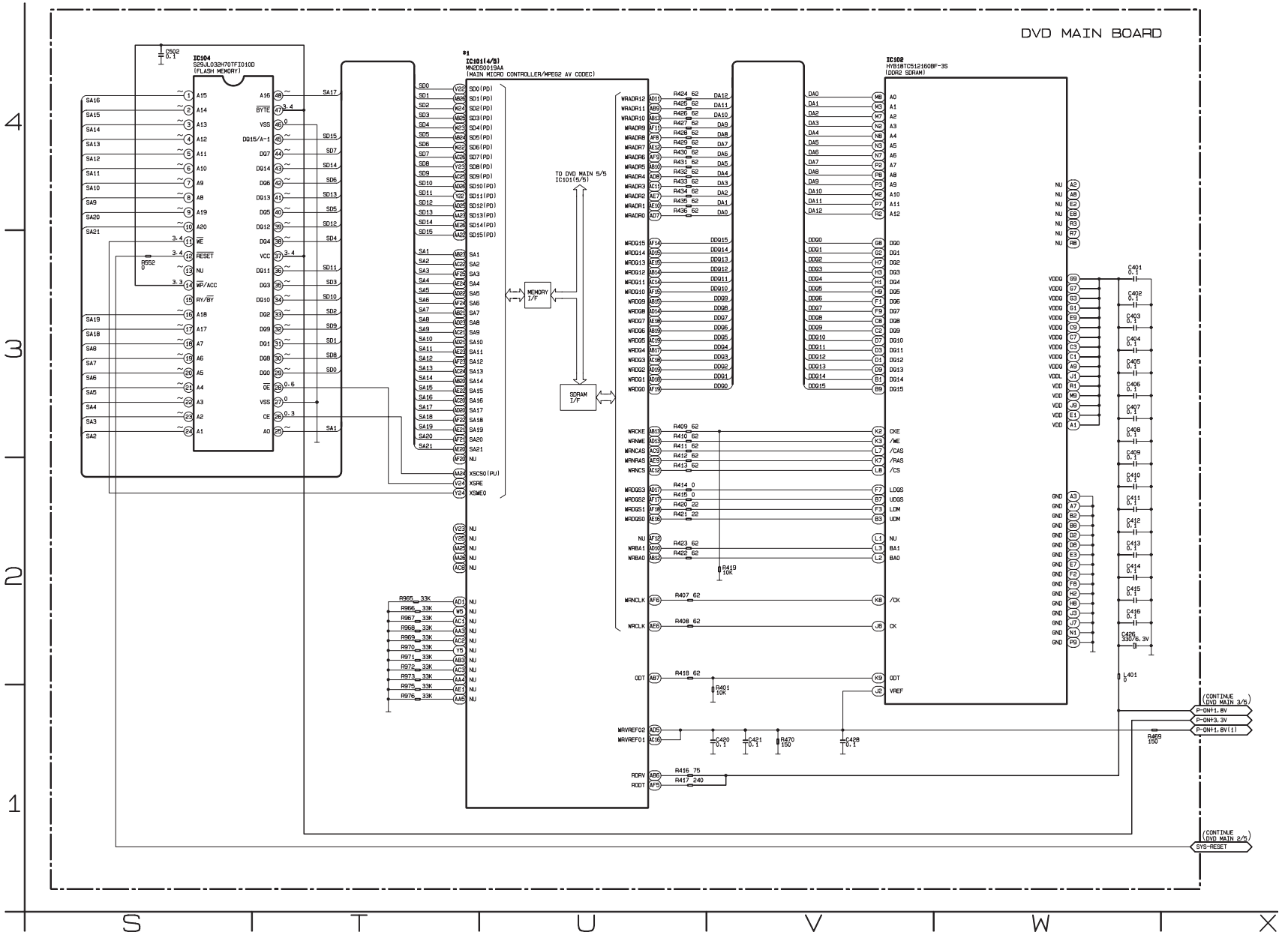
*1 **NOTE:**
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.


REC VIDEO SIGNAL
PB VIDEO SIGNAL
REC AUDIO SIGNAL
PB AUDIO SIGNAL
DVD MAIN BOARD
IC101(3/5)
MN2DS0019AA
(MAIN MICRO CONTROLLER/MPEG2 AV CODEC)
ATA I/F
TO DVD MAIN 5/5 IC101(5/5)
IC106 PQ03BZN1HZPH (+1.2V REGULATOR)
IC107 R3112N161A-TR-FA (RESET)
CN101
(TO BOARD MAIN CN1501)
(CONTINUE DVD MAIN 1/5)
(CONTINUE DVD MAIN 2/5)
(CONTINUE DVD MAIN 4/5)
(CONTINUE DVD MAIN 5/5)
MONI2
SPDIF
SYS-RESET
AVDDAC
P-ON+1.8V
P-ON+3.3V
P-ON+5V
EV+10.5V
DVD-P-ON+5V
DVD-P-ON+3.3V
AL+3V
1V2CONT
*2: A2, A26, B3, B25, C1, C4, C24, D5, D23, E6, E22
*3: AB11, AB16, AB18, AC5, AC13, AD4, AD9, AE5, AE11, AE14, AF7, AF16
*4: K11~K15, L10, L17, M10, M17, N10, N17, P10, P17, R10, R17, T10, T17, AB22, AC23, AD24, AE25, AF26
*5: T12~T15, U11~U14, AB5, AC4, AC9, AE2, AF1
*6: A1, A3, A8, A19, A21, A23, B2, B8, B19, B21, B22, B26, C3, C8, C17~C19, C22, C26, D2, D4, D8, D16, D22, E4, E8, E16, F6, G1~G3, H3, K3, K10, K17, L2, L5, L11~L15, M4, M11~M15, N5, N11~N15, P11~P15, R11~R15, T11, T16, U10, U17, AB8, AC10, AC15, AC17, AD6, AD16, AE8, AE17, AE19, AF4, AF10, AF13
*7: A15, B13, C15, D12, D26, E9, E13, E25, E26, F25, G25, H25, M22

DVD MAIN 4/5 Schematic Diagram < DVD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

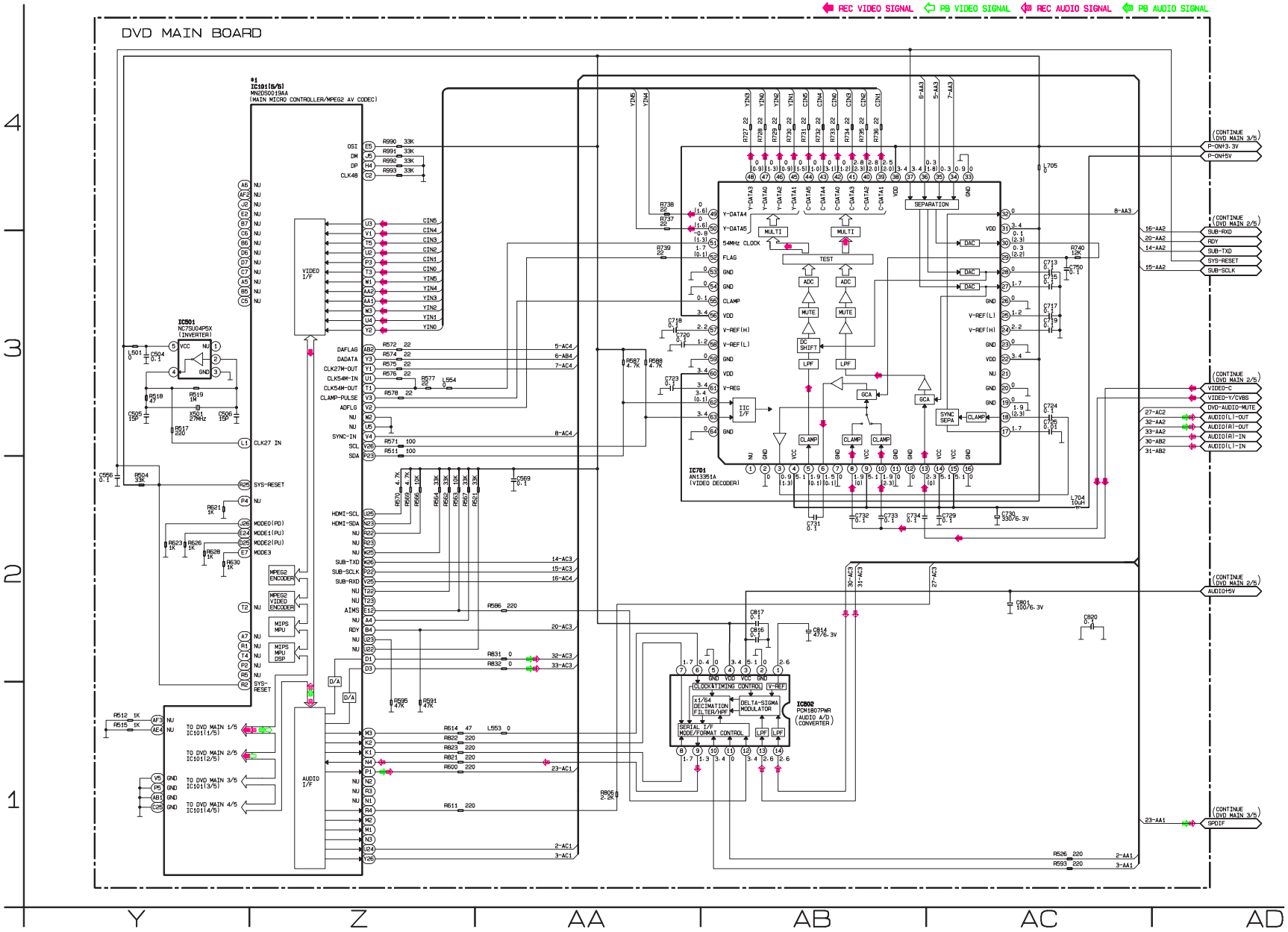
＊1 NOTE:
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



DVD MAIN 5/5 Schematic Diagram < DVD Section >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

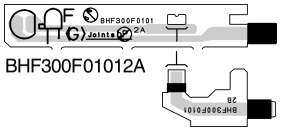
∗1 NOTE:
The order of pins shown in this diagram is different from that of actual IC101.
IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.

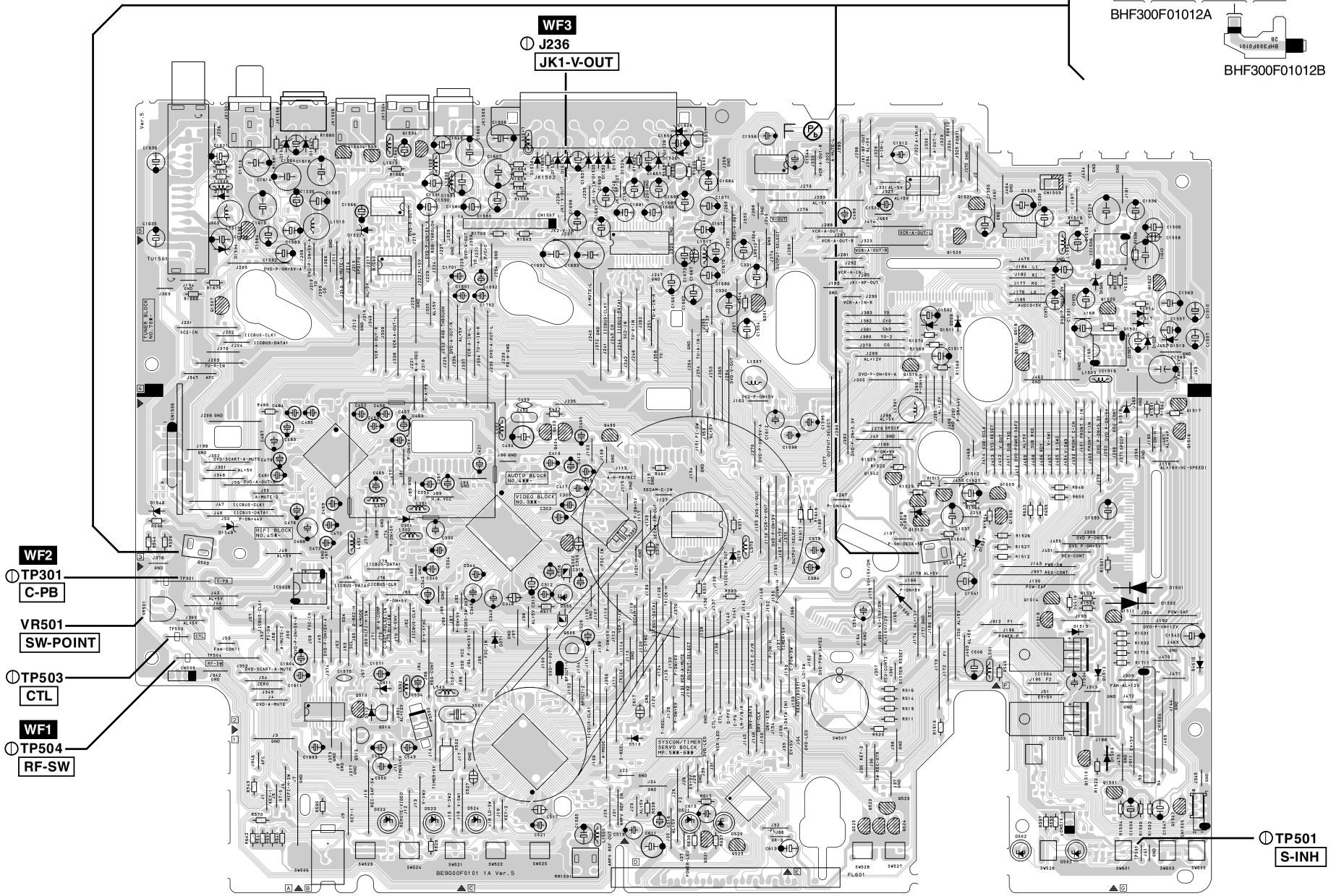


BOARD MAIN Top View

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

BOARD SENSOR Top View

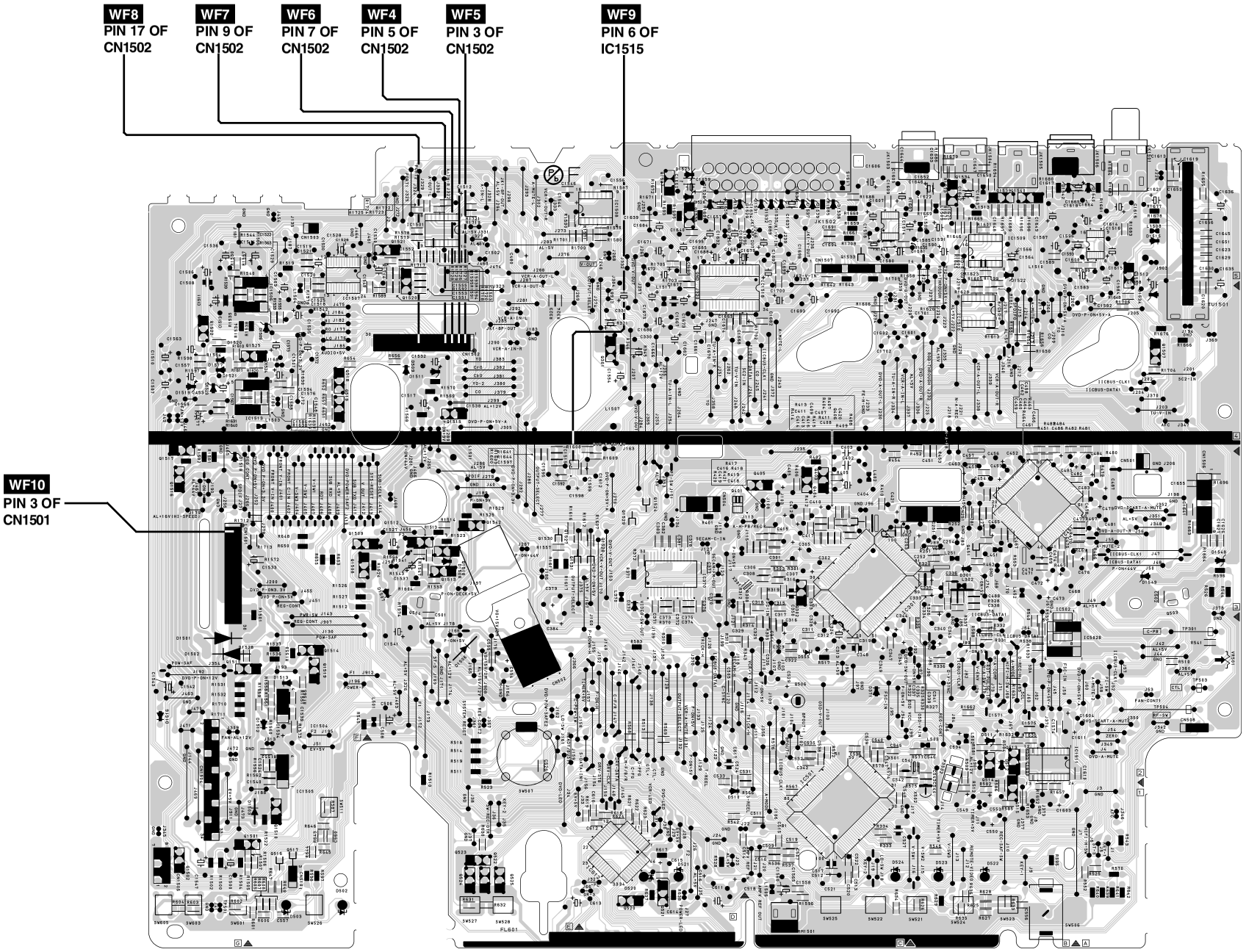




BE9G00F01011A

BOARD MAIN Bottom View

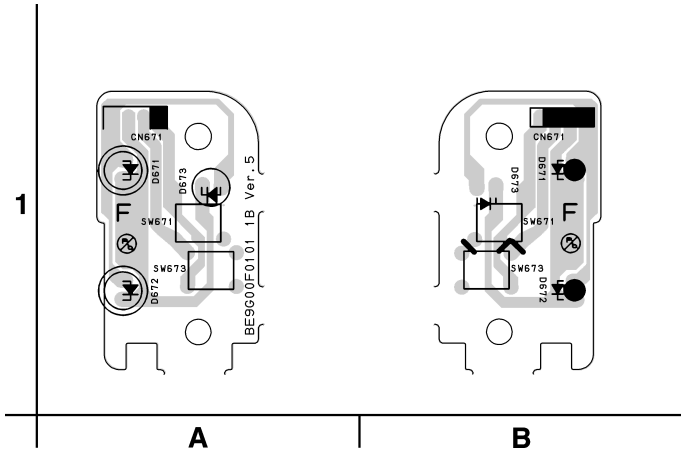
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

BOARD POWER SWITCH
Top View

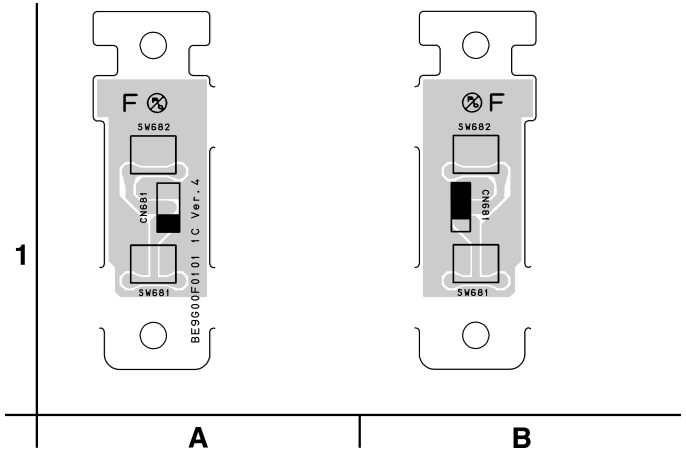
BOARD POWER SWITCH
Bottom View



BE9G00F01011B

BOARD FUNCTION
Top View

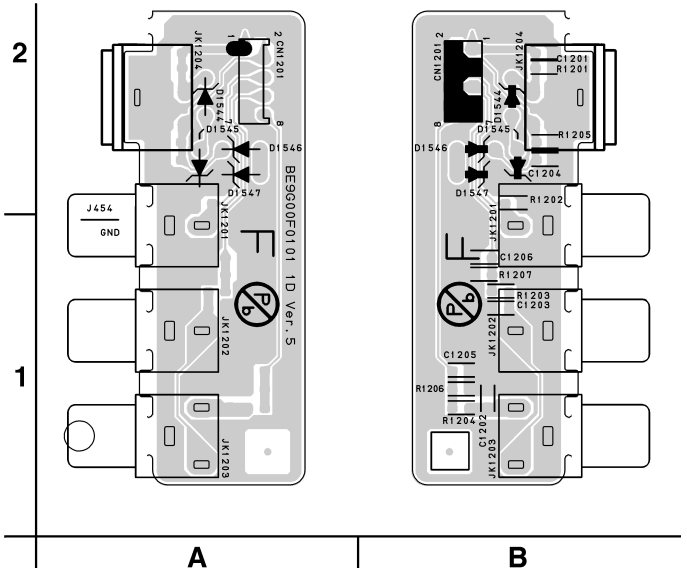
BOARD FUNCTION
Bottom View



BE9G00F01011C

BOARD FRONT JACK
Top View

BOARD FRONT JACK
Bottom View



BE9G00F01011D

BOARD POWER SUPPLY Top View

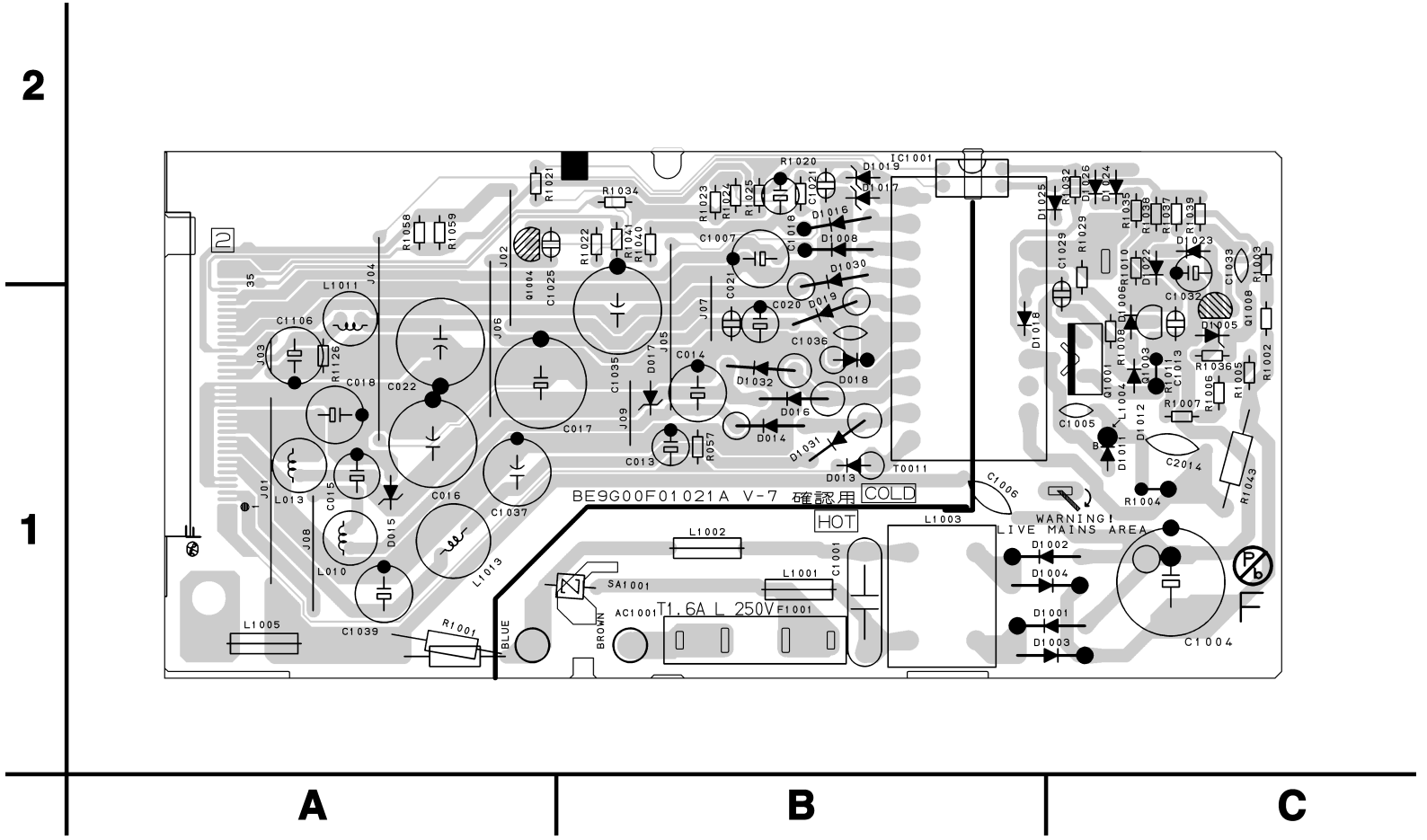
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



BOARD POWER SUPPLY Bottom View

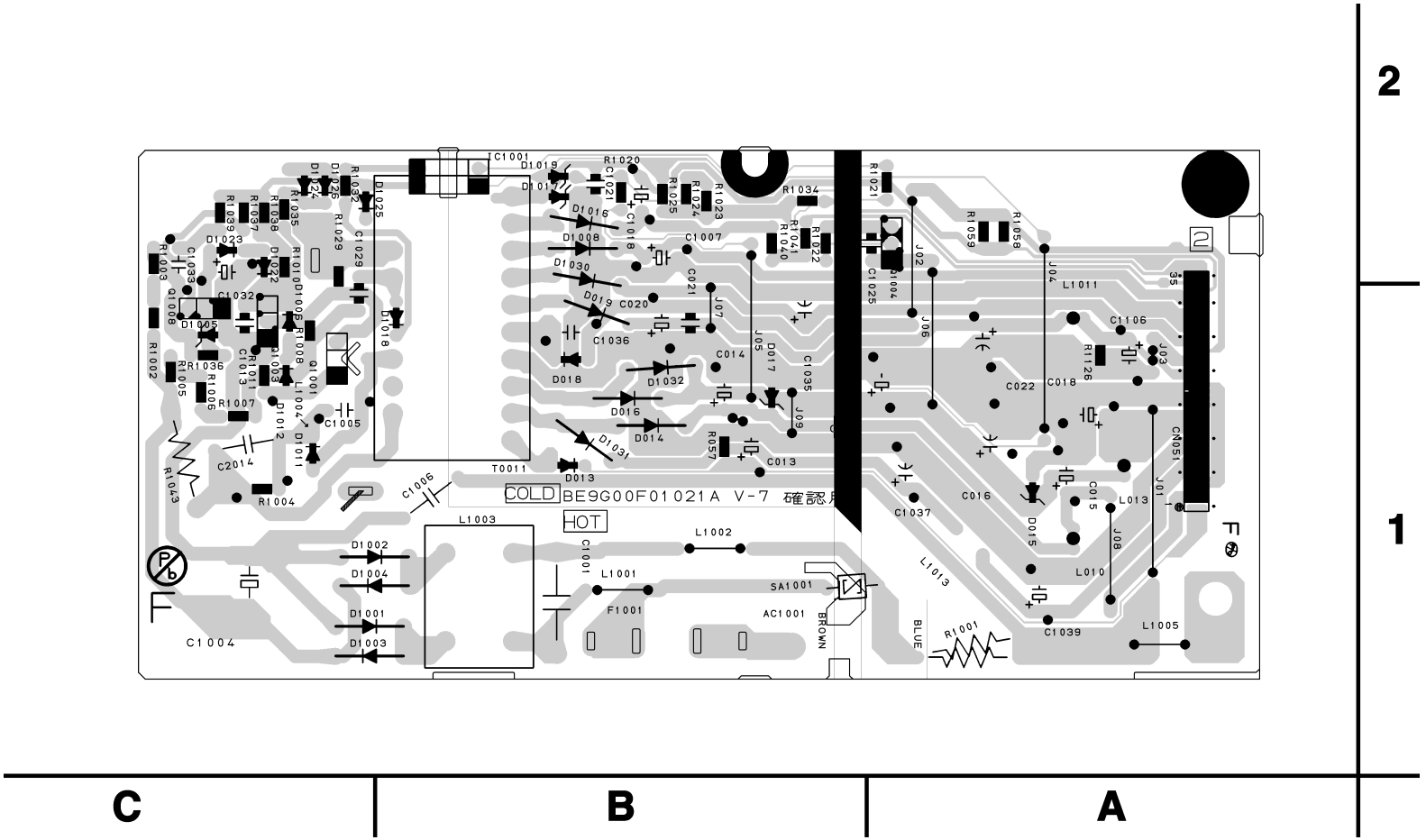
NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.

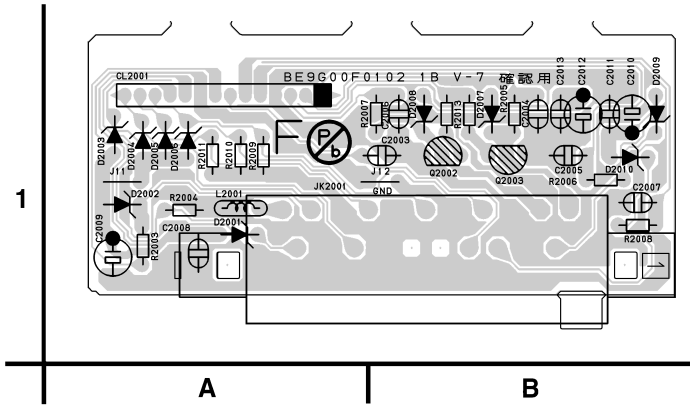
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

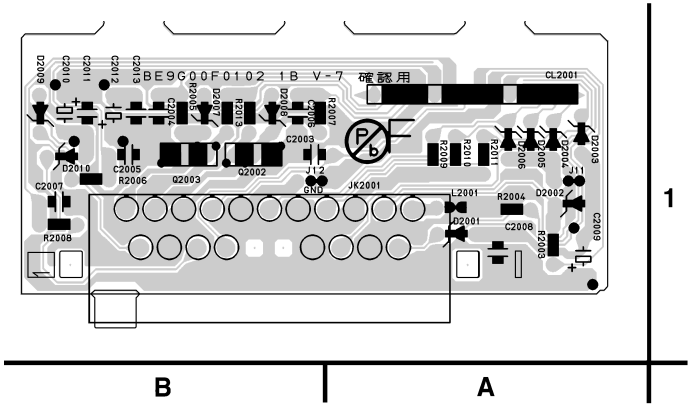


BOARD REAR JACK Top View



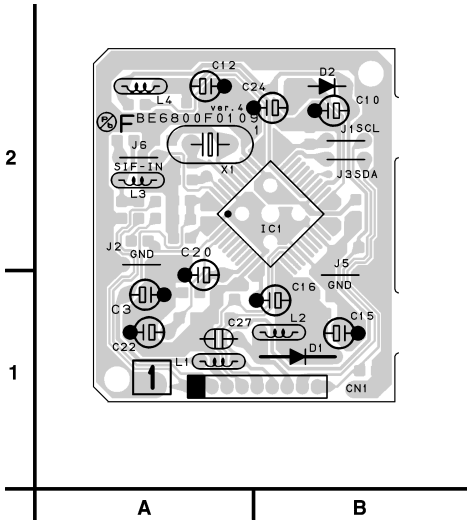
BOARD REAR JACK Bottom View

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.

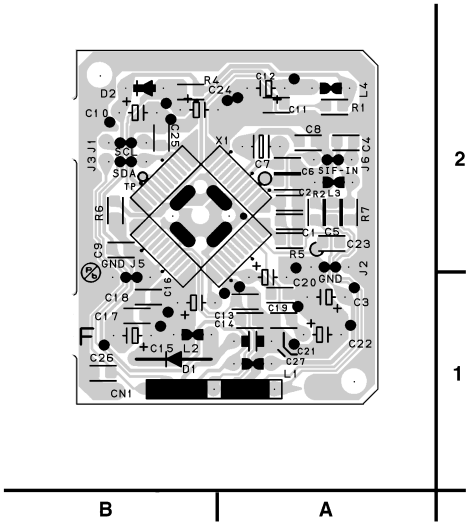


BE9G00F01021B

BOARD AFV Top View



BOARD AFV Bottom View

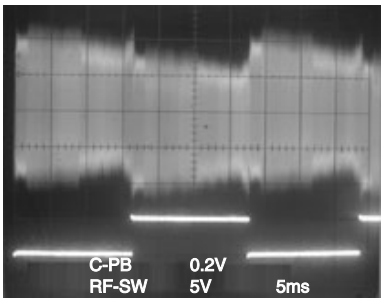


BE6800F01091

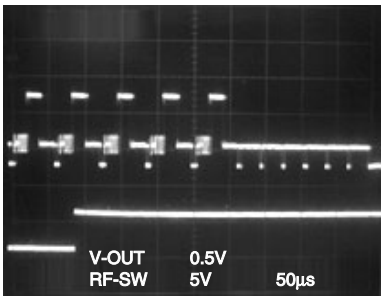
WAVEFORMS

NOTE:
Input: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL)

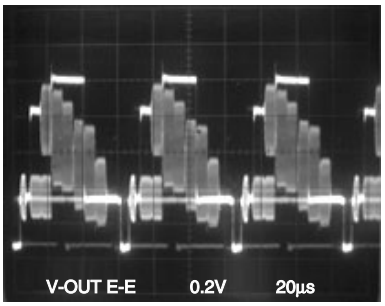
WF2 UPPER TP301
WF1 LOWER TP504



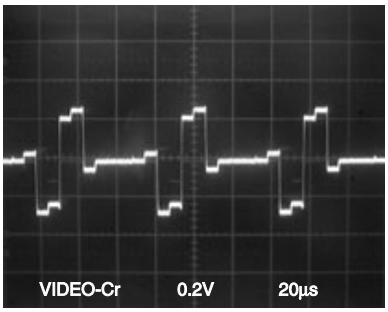
WF3 UPPER J236
WF1 LOWER TP504



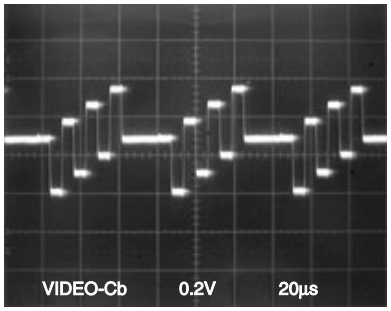
WF3 J236



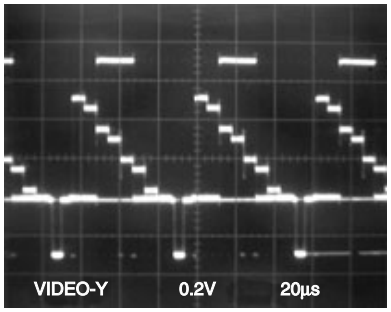
WF4 Pin 5 of CN1502



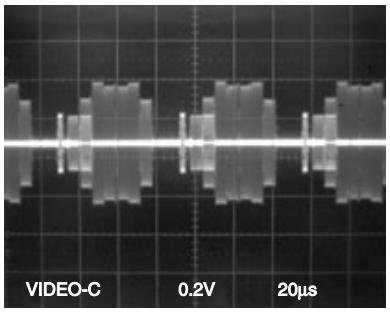
WF5 Pin 3 of CN1502



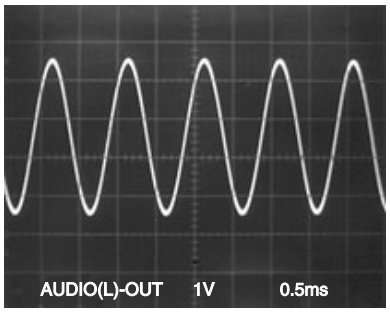
WF6 Pin 7 of CN1502



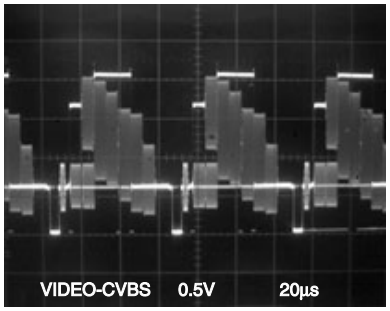
WF7 Pin 9 of CN1502



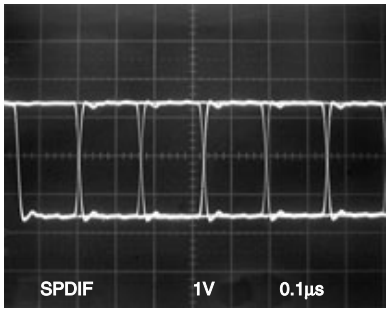
WF8 Pin 17 of CN1502



WF9 Pin 6 of IC1515

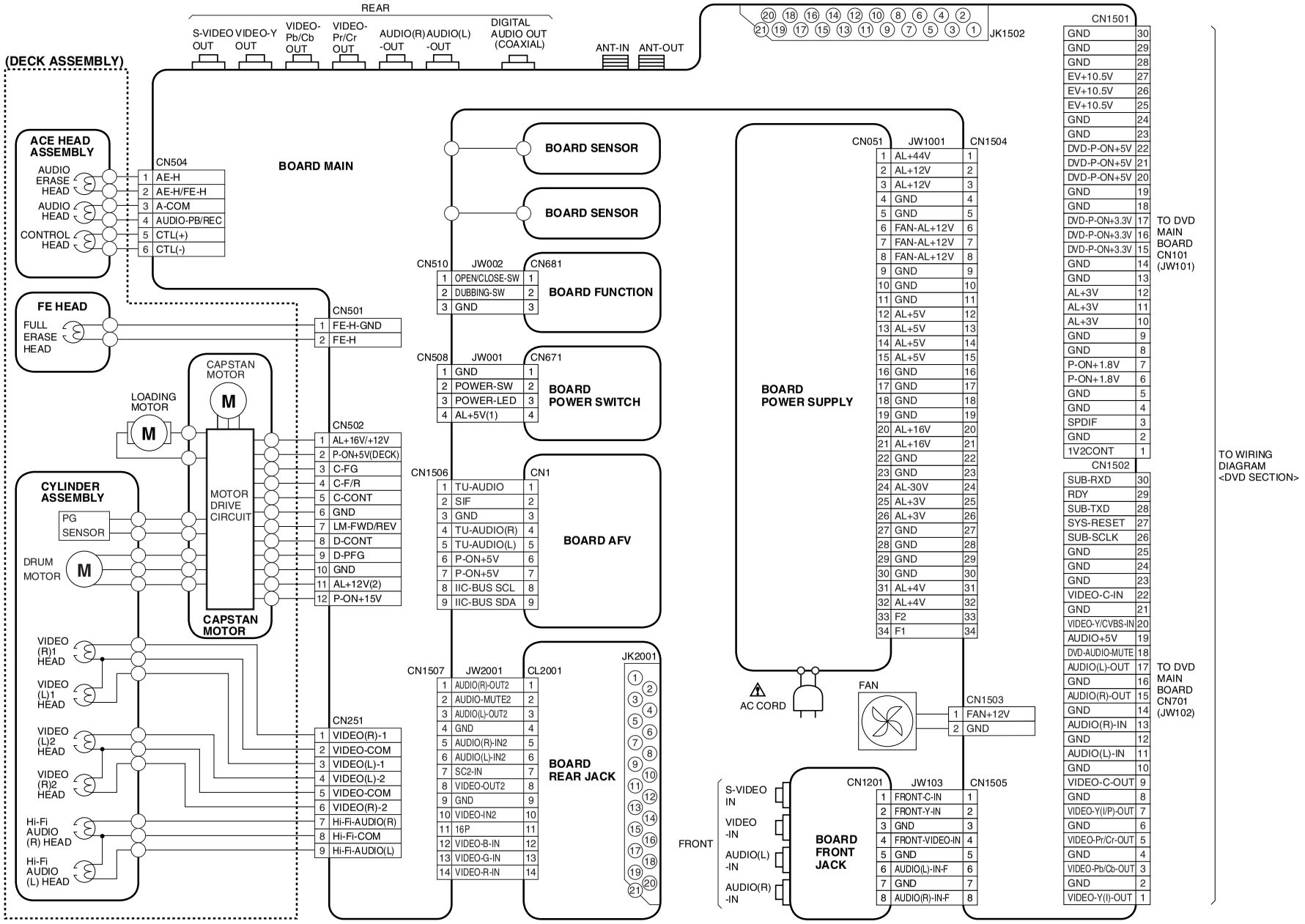


WF10 Pin 3 of CN1501



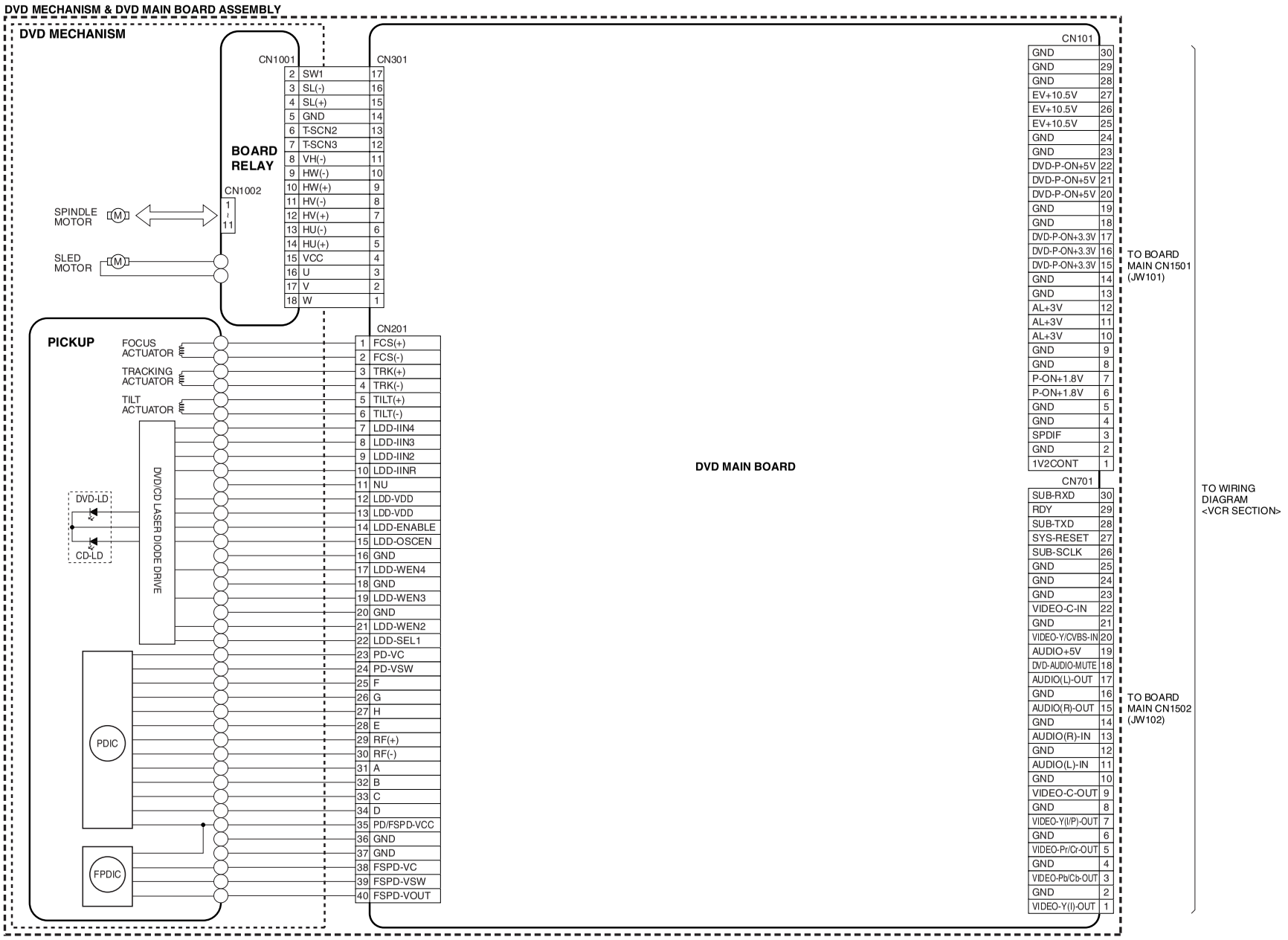
WIRING DIAGRAM < VCR SECTION >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



WIRING DIAGRAM < DVD SECTION >

NOTE: BOARD MEANS PRINTED CIRCUIT BOARD.



IC PIN FUNCTION DESCRIPTIONS

< VCR Section >

IC501(SERVO / SYSTEM CONTROL)

Pin No.	IN/ OUT	Signal Name	Function
1	IN	SC2-IN	Input Signal from Pin 8 of SCART2
2	IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage
3	IN	DVD-POW-SAFETY	Abnormal Voltage Detection
4	IN	END-S	Tape End Position Detect Signal
5	IN	AFC	Automatic Frequency Control Signal
6	IN	V-ENV	Video Envelope Comparator Signal
7	IN	KEY-1	Key Data Input 1
8	IN	KEY-2	Key Data Input 2
9	IN	LD-SW	Deck Mode Position Detector Signal
10	IN	ST-S	Tape Start Position Detector Signal
11	OUT	FAN-CONT1	Fan Motor Control Signal
12	-	NU	Not Used
13	OUT	D-V- SYNC	Dummy V-sync Output
14	IN	REMOTE	Remote Signal Input
15	OUT	C-ROTA	Color Phase Rotary Changeover Signal
16	OUT	H-A-SW	Video Head Amp Switching Pulse
17	IN	H-A-COMP	Head Amp Comparator Signal
18	OUT	RF-SW	Video Head Switching Pulse
19	OUT	Hi-Fi-H-SW	HiFi Audio Head Switching Pulse
20	OUT	I/P-SW	Progressive/Interlace Data Output
21	-	NU	Not Used
22	OUT	VIDEO-SW1	Video Input Select Signal 1
23	OUT	VIDEO-SW2	Video Input Select Signal 2
24	OUT	VIDEO-SW3	Video Input Select Signal 3
25	OUT	REG-CONT2	Power Regulator Control Signal
26	OUT	DVD-AUDIO-MUTE	DVD Audio Mute Control Signal
27	OUT	RGB-THROUGH	SCART 2 RGB Through Control Signal
28	OUT	AUDIO-MUTE-2	Audio Mute Control Signal
29	OUT	DVD-AUDIO-MUTE2	DVD Audio Mute Control Signal
30	OUT	DVD-SCART-AUDIO-MUTE	DVD SCART Audio Mute Control Signal
31	IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab="L"/ With out Record tab="H")
32	IN	P-DOWN -H	Power Voltage Down Detector Signal
33	OUT	D-REC-H	Delayed Record Signal
34	IN	RESET	System Reset Signal (Reset="L")
35	IN	Xcin	Sub Clock Input
36	OUT	Xcout	Sub Clock Output
37	-	Vcc	+5V Power Supply (Timer)
38	IN	Xin	Main Clock Input
39	OUT	Xout	Main Clock Output
40	-	Vss	Ground
41	OUT	PWR-SW	DVD Power Supply Control Signal
42	OUT	REG-CONT	Power Regulator Control Signal
43	IN	NU	Ground
44	IN	OSCin	Clock Input for letter size
45	OUT	OSCout	Clock Output for letter size
46	-	NU	Ground
47	IN	LP	LP
48	IN	FSC-IN [4.43MHz]	4.43MHz Clock Input
49	-	OSDVss	OSDVss
50	IN	OSD-V-IN	OSD Video Signal Input
51	-	NU	Not Used
52	OUT	OSD-V-OUT	OSD Video Signal Output
53	-	OSDVcc	+5V at Power On Signal
54	-	HLF	LPF Connected Terminal (Slicer)
55	IN	COLOR-IN	SECAM or MESECAM Chroma Video Input Signal at Super Impose
56	IN	DAVN-L	VPS/PDC Data Receive = "L"
57	-	NU	Not Used
58	IN	C-SYNC	Composite Synchronized Pulse

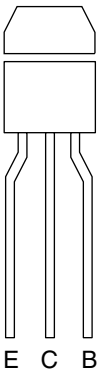
Pin No.	IN/ OUT	Signal Name	Function
59	OUT	8POUT-1	Control SCART 1 8Pin Level by using 8POUT-1 and 8POUT-2
60	OUT	8POUT-2	Control SCART 1 8Pin Level by using 8POUT-1 and 8POUT-2
61	IN	SECAM-H	SECAM Mode at High
62	OUT	TRICK-H	Special playback = “H” in SECAM Mode
63	OUT	SYSTEM-RESET	System Reset Signal
64	IN	READY/ BUSY	Ready/Busy communication Control with Main Micro Controller
65	OUT	S-DATA-OUT	Communication of Data from VCR Micro Controller
66	IN	S-DATA-IN	Communication of Data to VCR Micro Controller
67	OUT	S-CLOCK	Communication of Clock with VCR Micro Controller
68	OUT	DRV-DATA	VFD Driver IC Control Data
69	OUT	DRV-STB	VFD Driver IC Chip Select Signal
70	OUT	DRV-CLK	VFD Driver IC Control Clock
71	OUT	IIC-BUS SCL	IIC BUS Serial Clock
72	IN/ OUT	IIC-BUS SDA	IIC BUS Serial Data
73	-	NU	Not Used
74	-	NU	Not Used
75	OUT	P-ON-H	Power On Signal to High
76	OUT	C-CONT	Capstan Motor Control Signal
77	OUT	D-CONT	Drum Motor Control Signal
78	OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD=“L”/ REV=“H”)
79	IN	S-REEL	Supply Reel Rotation Signal
80	IN	T-REEL	Take Up Reel Rotation Signal
81	OUT	LM-FWD/ REV	Loading Motor Control Signal
82	OUT	OUTPUT-SELECT	Output Select
83	OUT	VCR-AUDIO-MUTE	Audio Mute Control Signal (Mute = “H”)
84	OUT	C-POW-SW	Capstan Power Switching Signal
85	IN	VCR-POW-SAFETY	VCR Power Supply Safety Signal
86	IN	A-MODE	Hi-Fi Tape Detection Signal
87	IN	C-FG	Capstan Motor Rotation Detection Pulse
88	-	AMPVss	Ground
89	IN	DVD-POW-SAFETY	DVD Power Supply Safety Signal
90	IN	D-PFG	Drum PG/FG Input Signal
91	-	AMPVREF out	V-Ref for CTL AMP
92	-	AMPVREF in	V-Ref for CTL AMP
93	-	P80/C	P80/C Terminal
94	IN/ OUT	CTL (-)	Playback/Record Control Signal (-)
95	IN/ OUT	CTL (+)	Playback/Record Control Signal (+)
96	-	AMPC	CTL AMP Connected Terminal
97	-	CTL	To Monitor for CTL AMP Output
98	-	AMPVcc	Always +5V with AC Plug Connected
99	-	AVcc	Always +5V with AC Plug Connected
100	IN	AGC	IF AGC Comparator Signal

IC612 (VFD DRIVER)

Pin No.	IN/ OUT	Signal Name	Name Function
1	OUT	POWER-LED	Power LED Control Signal
2	OUT	DVD-LED	DVD LED Control Signal
3	OUT	VCR-LED	VCR LED Control Signal
4	-	NU	Not Used
5	IN	OSC	Oscillator Input
6	-	NU	Not Used
7	IN	DRV-DIN	DRV-Serial Data
8	IN	DRV-CLK	DRV-Serial Clock
9	IN	DRV-STB	DRV-Serial Interface Strobe
10	-	NU	Not Used
11	-	NU	Not Used
12	-	VSS	Ground
13	-	VDD	+5V Power Supply
14	-	NU	Not Used
15	-	NU	Not Used
16	-	NU	Not Used
17	-	NU	Not Used
18	-	NU	Not Used
19	-	NU	Not Used
20	OUT	c	Segment Output
21		b	
22		a	
23		d	
24		e	
25		f	
26		g	
27		h	
28		i	
29	-	NU	Not Used
30	-	VEE	Pull Down Level
31	-	NU	Not Used
32	-	NU	Not Used
33	-	NU	Not Used
34	-	NU	Not Used
35	-	NU	Not Used
36	OUT	7G	Grid Output
37		6G	
38		5G	
39		4G	
40		3G	
41		2G	
42		1G	
43	-	VDD	+5V Power Supply
44	-	VSS	Ground

LEAD IDENTIFICATIONS

KRA103M-AT/P
KRA104M-AT/P
KRC103M-AT/P
KTA1267-Y-AT/P
KTA1273-Y-AT/P
KTA1281Y-AT/P
KTC3199-(BL,Y)-AT/P



2SC1815-Y(TE2 F T)
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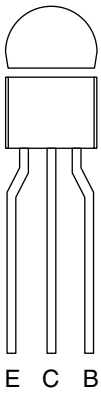
KTC3198-Y-AT/P
KTC3203-Y-AT/P
KTC3205-Y-AT/P



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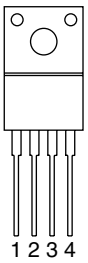

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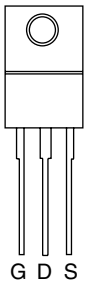

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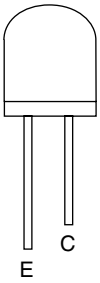

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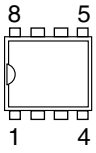
UTC4580



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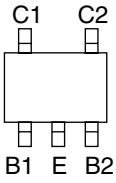

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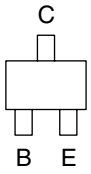
KTC3875S-(GR,Y)-RTK/P
KTC3879-Y-RTK/P



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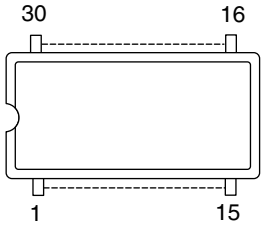

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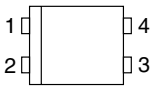
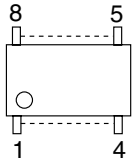


1: Anode
2: Cathode
3: Emitter
4: Collector

MM1636XWRE



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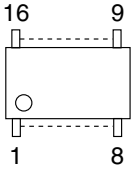

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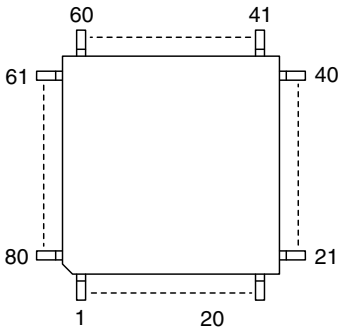

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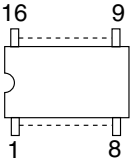

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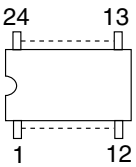

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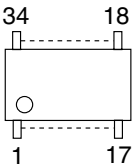

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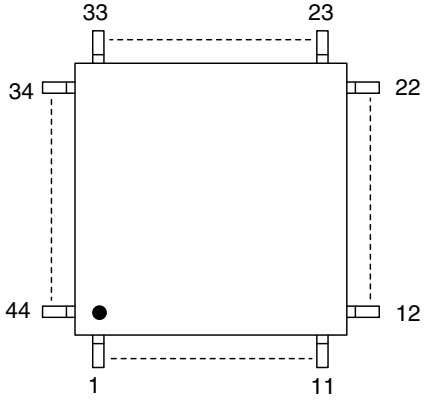
PT6315(L)



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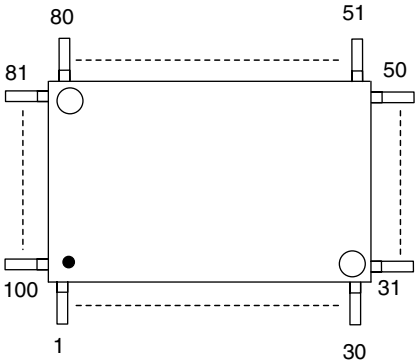
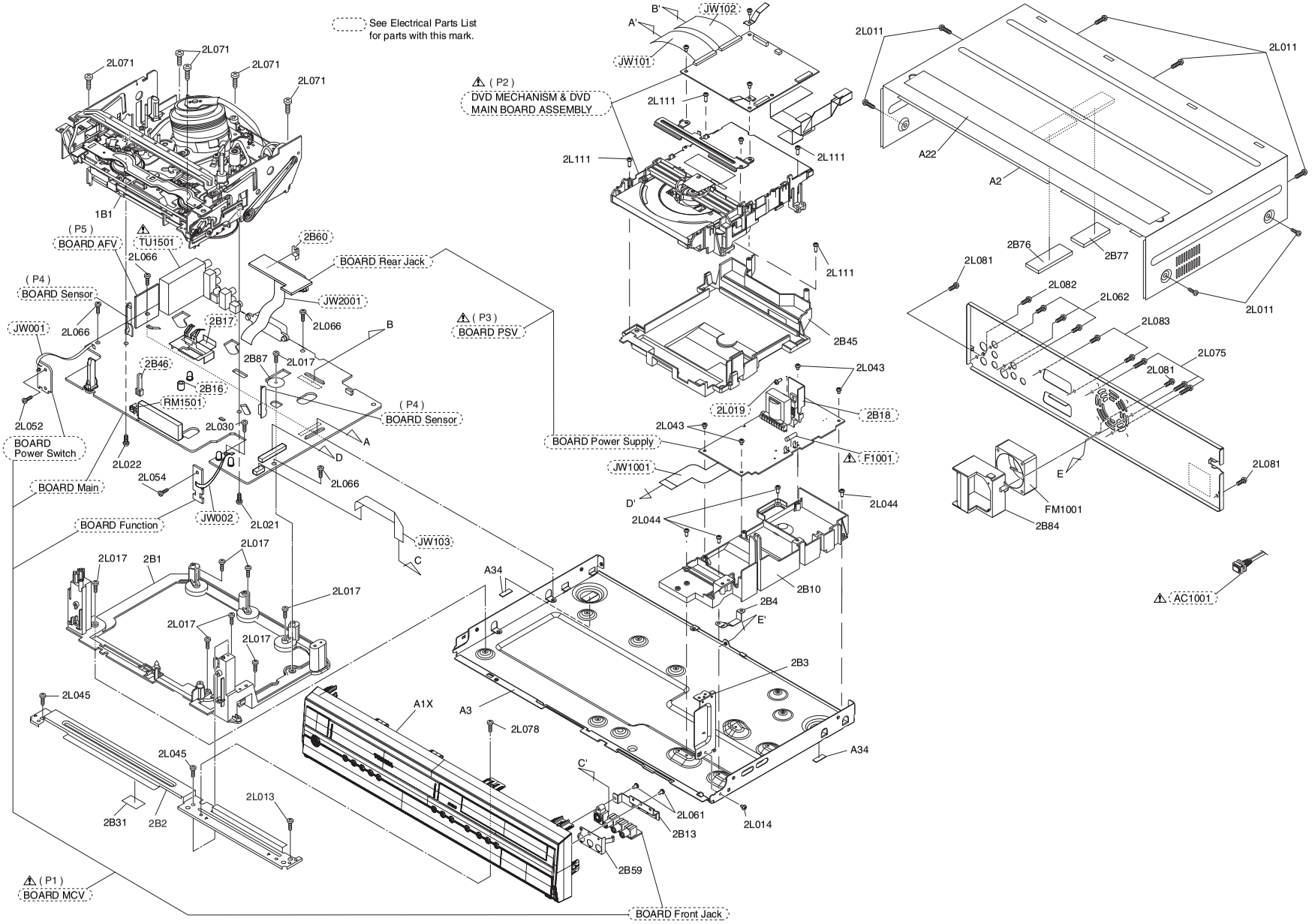
LA71750EM-MPB-E



Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

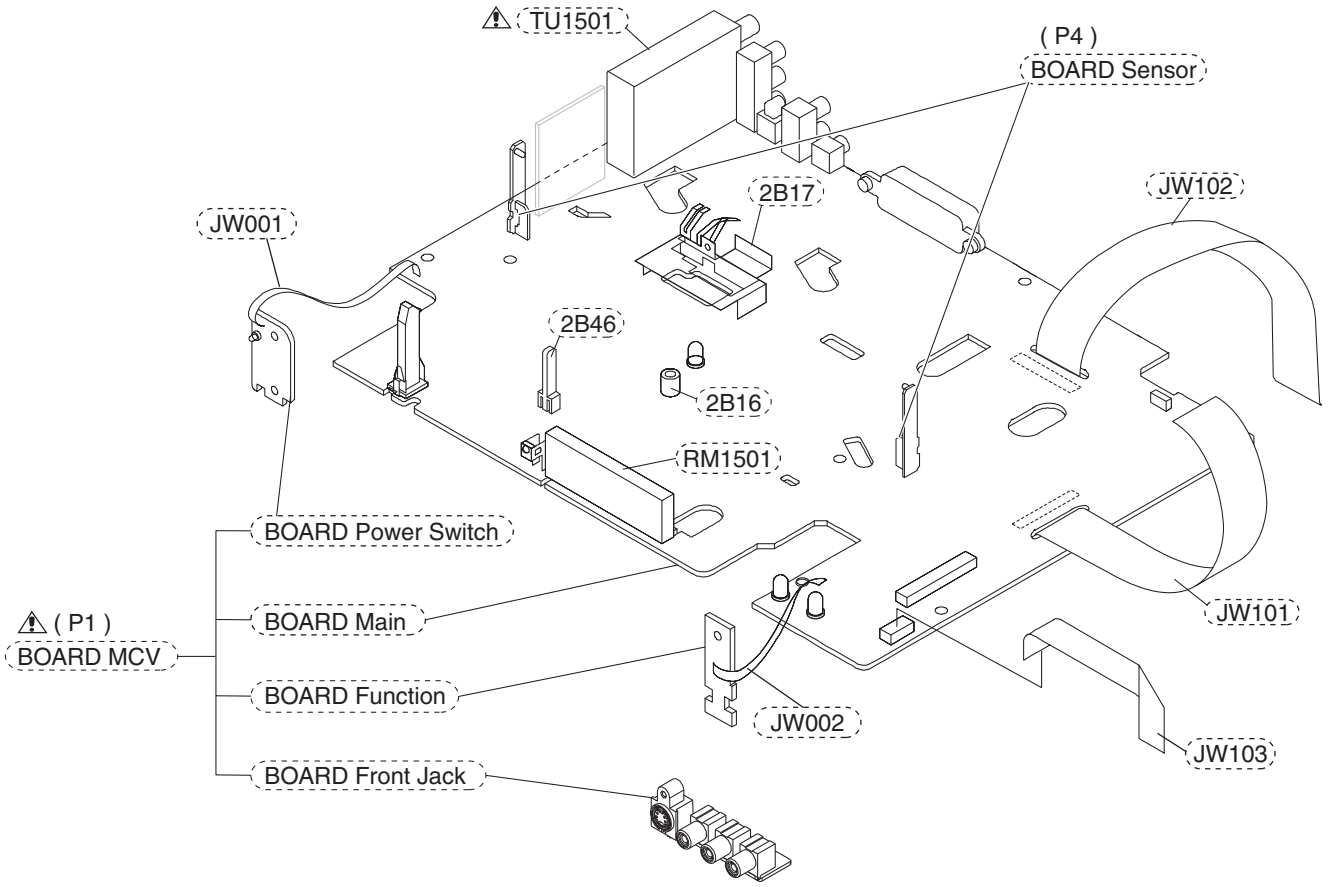
EXPLODED VIEWS

Cabinet

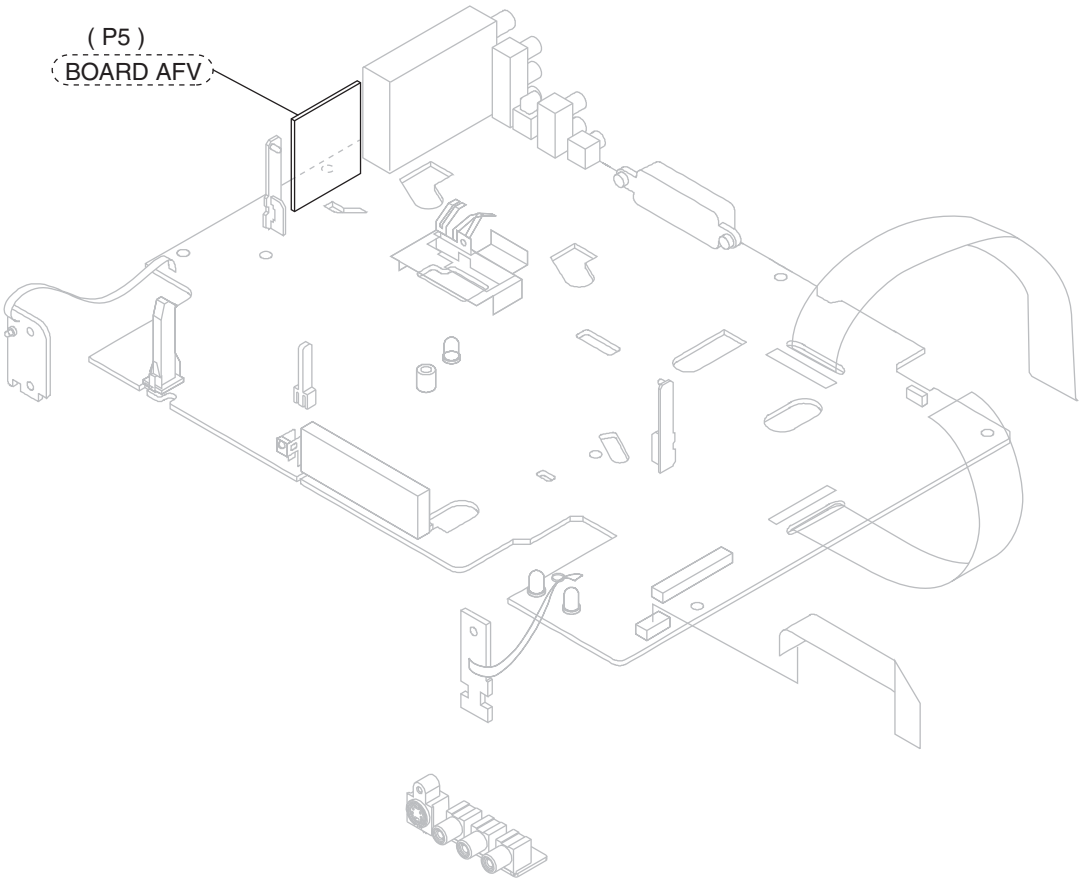


(P1) BOARD MCV

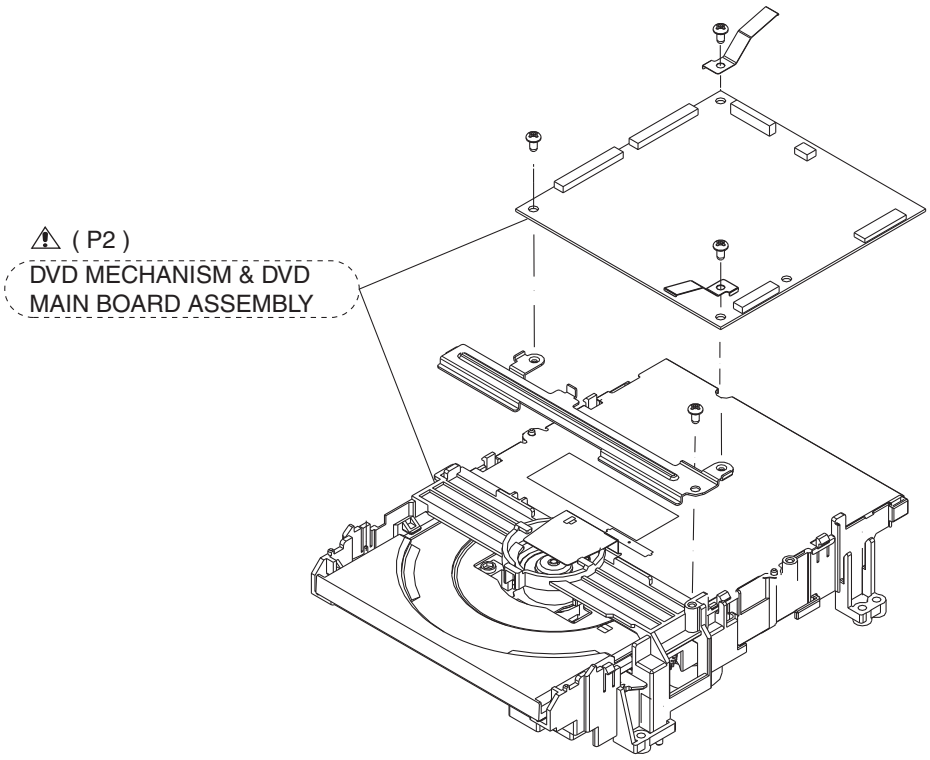
(P4) BOARD SENSOR



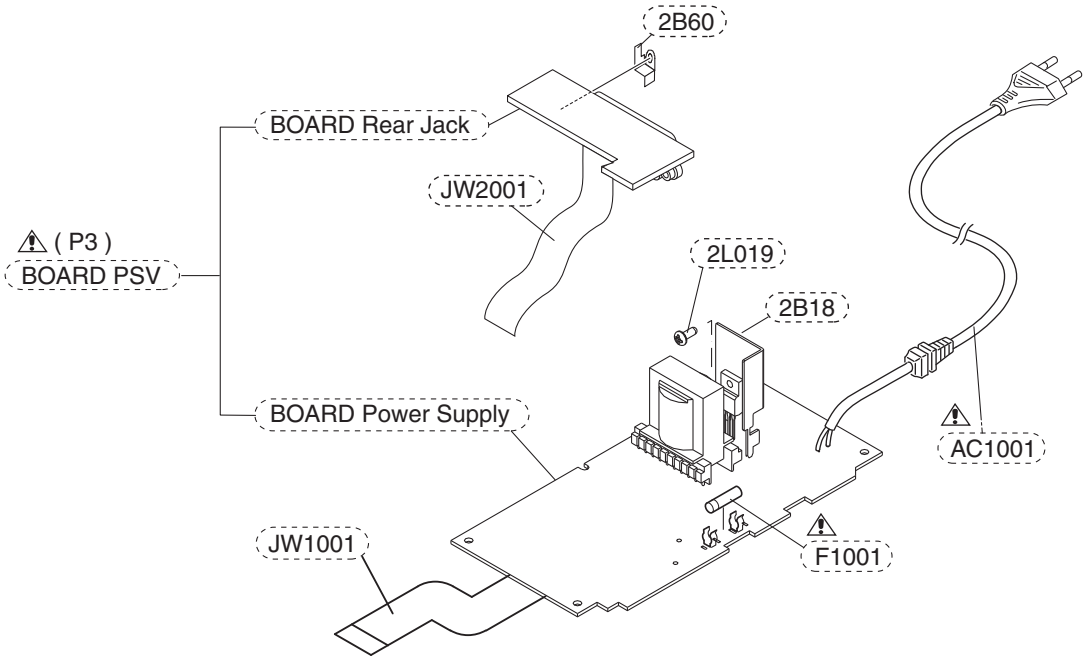
(P5) BOARD AFV



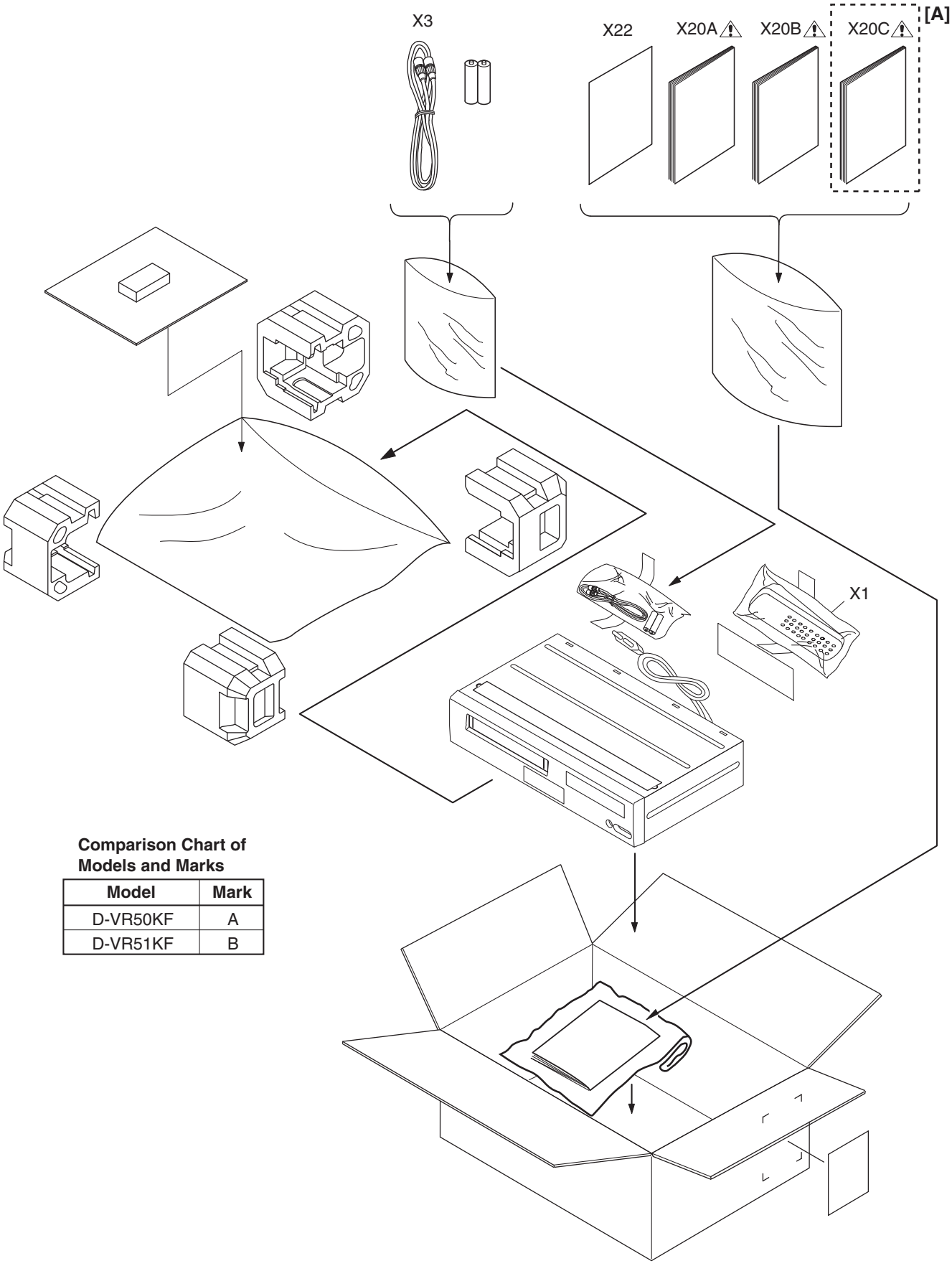
(P2) DVD MECHANISM & DVD MAIN BOARD ASSEMBLY



(P3) BOARD PSV



Packing



Comparison Chart of Models and Marks

Model	Mark
D-VR50KF	A
D-VR51KF	B

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

Comparison Chart of Models and Marks

Model	Mark
D-VR50-K-TF	A
D-VR51-K-TF	B

⚠	Location No.	Mark	TSB P/N	Reference No.	Description
	A1X	A	P000490170	1VM222912	PANEL FRONT E9GA1FD
	A1X	B	P000490260	1VM223053	PANEL FRONT E9GA3FD
	A2		P000489940	1VM222942	COVER TOP E9GA0BD
	A3			0VM101353H	MAIN CHASSIS E9400UD
	A22	A		1VM323880	TOPPER POP E9GA1FD
	A22	B		1VM323933	TOPPER POP E9GA3FD
	A34			0VM406940A	FOOT H5100UD
	1B1			N25E1FL	DECK ASSEMBLY CZD014/VM25E0
	2B1			1VM120055G	DECK PEDESTAL E9600UD
	2B2			0VM204534C	FRONT BRACKET E9400UD
	2B3			0VM416269A	FRONT BRACKET R E9400UD
	2B4			1VM425084	PLATE EARTH E9H10UD
	2B10			1VM121066F	BOARD HOLDER E9H10UD
	2B13			0VM416273	JACK BRACKET E9400UD
	2B31			0VM413956	TAPE HIMELON H9206JD
	2B45			1VM323812A	DUST COVER(R4 PAL) E9GA0BD
	2B59			1VM322618A	JACK PLATE EARTH E9A80UD
	2B76			1VM424744	RUBBER CUSHION(B) E9B00ED
	2B77			1VM424745	RUBBER CUSHION(C) E9B00ED
	2B84			1VM323512	FAN HOLDER E9H10UD
	2B87			1VM425701	BOARD WASHER E9H10UD
	2L011			GBHC3050	SCREW TAP TIGHT M3X5 BIND HEAD+BLK NI
	2L013			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L014			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L017			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	2L021			GBCP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L022			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L030			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L043			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L044			0VM413320A	SCREW S-TIGHT 3X8 H9210UD
	2L045			GBJP3080	SCREW P-TIGHT M3X8 BIND HEAD+
	2L052			GBJP3060	SCREW P-TIGHT M3X6 BIND HEAD+
	2L054			GBJP3060	SCREW P-TIGHT M3X6 BIND HEAD+
	2L061			GBJP3060	SCREW P-TIGHT M3X6 BIND HEAD+
	2L062			GBHB3080	SCREW B-TIGHT M3X8 BIND HEAD+
	2L066			0VM412937A	SCREW C-TIGHT M3X6 E5610UD
	2L071			GCJP3100	SCREW P-TIGHT M3*10 WASHERHEAD+
	2L075			GBHP3080	SCREW P-TIGHT M3X8 BIND HEAD+ BLK
	2L078			GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	2L081			GBHS3060	S-TIGHT SCREW M3X6 BIND HEAD+BLACK
	2L082			GBHS3060	S-TIGHT SCREW M3X6 BIND HEAD+BLACK
	2L083			GBHP3080	SCREW P-TIGHT M3X8 BIND HEAD+ BLK
	2L111			GBJP3140	SCREW P-TIGHT 3X14 BIND HEAD +
	FM1001		P000490010	MMEZR12XNR01	MOTOR DC FAN 2D65BK100100
ACCESSORIES					
	X1		P000490250	NB330ED	REMOTE CONTROL UNIT NB330ED
	X3		P000460030	WPZ0122LG001	RF CORD PAL 1.2M
⚠	X20A		P000490180	1VMN23635	OWNERS MANUAL(FRE) E9GA1FD
⚠	X20B		P000490190	1VMN23636	OWNERS MANUAL(ENG) E9GA1FD
⚠	X20C	A	P000490210	1VMN23647	OWNERS MANUAL(GER) E9GA1FD
	X22		P000490200	1VMN23637	QUICK GUIDE E9GA1FD

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% D.....±0.5% F.....±1%

G.....±2% J.....±5% K.....±10%

M.....±20% N.....±30% Z.....+80/-20%

DVD MECHANISM & DVD MAIN BOARD ASSEMBLY

⚠	Location No.	TSB P/N	Reference No.	Description
⚠	P2	P000490240	N78EBDFN	DVD MECHANISM & DVD MAIN BOARD ASSEMBLY

BOARD MCV

⚠	Location No.	TSB P/N	Reference No.	Description
⚠	P1	P000490230	1VSA15827	BOARD MCV Consists of the following
			---------	BOARD MAIN (MCV-A)
			---------	BOARD POWER SWITCH (MCV-B)
			---------	BOARD FUNCTION (MCV-C)
			---------	BOARD FRONT JACK (MCV-D)
	P4	P000465450	1VSA11699	BOARD SENSOR

BOARD MAIN

⚠	Location No.	TSB P/N	Reference No.	Description
			---------	BOARD MAIN (MCV-A) Consists of the following:
	CAPACITORS			
	C251		CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C252		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C253		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C254		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C301		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V
	C302		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C303		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C305		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C306		CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V
	C307		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V
	C308		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C311		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C312		CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C313		CE1JMASSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C314		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C315		CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047µF/50V
	C316		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C317		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C318		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V
	C322		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C324		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C325		CHD1JK30B822	CHIP CERAMIC CAP. B K 8200pF/50V
	C326		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C328		CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C329		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C330		CE1CMASDL101	ELECTROLYTIC CAP. 100µF/ 16V M
	C331		CE0KMASDL221	ELECTROLYTIC CAP. 220µF/ 6.3V M
	C333		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C334		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C335		CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/ 6.3V H7
	C336		CHD1JJ3CH221	CHIP CERAMIC CAP. CH J 220pF/50V
	C337		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C339		CHD1JJ3CH121	CHIP CERAMIC CAP. CH J 120pF/50V
	C340		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C341		CHD1JD3CH100	CHIP CERAMIC CAP.(1608) CH D 10pF/50V
	C342		CHD1JJ3CH102	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V
	C343		CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C344		CP1EMAVSB4R7	ELECTROLYTIC CAP. 4.7µF/25V M NP H7
	C345		CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47µF/ 50V M H7
	C347		CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V
	C349		CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47µF/ 50V M H7
	C350		CCA1JZTFZ104	CERAMIC CAP.(AX) F Z 0.1µF/ 50V
	C370		CCA1CMT0Y103	CERAMIC CAP.(AX) Y M 0.01µF/ 16V
	C371		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V
	C372		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C373		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C374		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C375		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C376		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022µF/50V
	C377		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V

⚠	Location No.	TSB P/N	Reference No.	Description
	C378		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C379		CE1JMAVSLR47	ELECTROLYTIC CAP. 0.47μF/ 50V M H7
	C381		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C382		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C383		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C384		CE1JMAVSL2R2	ELECTROLYTIC CAP. 2.2μF/50V M H7
	C402		CA1J183MS029	FILM CAP.(P) 0.018μF/50V J
	C403		CCD2AKS0B471	CERAMIC CAP. B K 470pF/100V
	C404		CE0KMASSL221	ELECTROLYTIC CAP. 220μF/ 6.3V M H7
	C405		CE0KMAVSL470	ELECTROLYTIC CAP. 47μF/6.3V M H7
	C407		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C408		CHD1JK30B182	CHIP CERAMIC CAP. B K 1800pF/50V
	C409		CHD1JJ3CH330	CHIP CERAMIC CAP.(1608) CH J 33pF/50V
	C410		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C411		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C412		CE0KMAVSL330	ELECTROLYTIC CAP. 33μF/6.3V M H7
	C413		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C414		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022μF/50V
	C415		CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C416		CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V
	C417		CE0KMAVSL220	ELECTROLYTIC CAP. 22μF/6.3V M H7
	C418		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C419		CHD1JJ3CH221	CHIP CERAMIC CAP. CH J 220pF/50V
	C421		CE0KMAVSL470	ELECTROLYTIC CAP. 47μF/6.3V M H7
	C451		CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C452		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C453		CE1AMAVSL220	ELECTROLYTIC CAP. 22μF/10V M H7
	C454		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C455		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C456		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C457		CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C458		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C461		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C462		CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V
	C463		CE1AMAVSL220	ELECTROLYTIC CAP. 22μF/10V M H7
	C464		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C465		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C466		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C467		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C468		CE0KMAVSL221	ELECTROLYTIC CAP. 220μF/ 6.3V M H7
	C469		CE1AMAVSL220	ELECTROLYTIC CAP. 22μF/10V M H7

⚠	Location No.	TSB P/N	Reference No.	Description
	C470		CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V
	C471		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C472		CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C473		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C474		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C475		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C476		CE0KMAVSL220	ELECTROLYTIC CAP. 22μF/6.3V M H7
	C477		CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C478		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C479		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C480		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C481		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C482		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C483		CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C484		CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7μF/25V M H7
	C485		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C486		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C487		CE1CMAVSL470	ELECTROLYTIC CAP. 47μF/16V M H7
	C488		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C502		CHD1JK30B223	CHIP CERAMIC CAP.(1608) B K 0.022μF/50V
	C505		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C506		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C507		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C508		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C509		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C510		CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V
	C511		CHD1JJ3CH101	CHIP CERAMIC CAP.(1608) CH J 100pF/50V
	C513		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C514		CHD1JK30B331	CHIP CERAMIC CAP. B K 330pF/ 50V
	C515		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C516		CE0KMAVSL220	ELECTROLYTIC CAP. 22μF/6.3V M H7
	C517		CCA1EZTFZ223	CERAMIC CAP.(AX) F Z 0.022μF/25V
	C518		CE0KMAVSL220	ELECTROLYTIC CAP. 22μF/6.3V M H7
	C519		CHD1JJ3CH561	CHIP CERAMIC CAP. CH J 560pF/50V
	C521		CE0KMAVSL220	ELECTROLYTIC CAP. 22μF/6.3V M H7
	C522		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C524		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C526		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C527		CCA1JKT0B101	CERAMIC CAP.(AX) B K 100pF/ 50V
	C531		CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V

⚠	Location No.	TSB P/N	Reference No.	Description
	C533		CHD1JK30B473	CHIP CERAMIC CAP.(1608) B K 0.047μF/50V
	C534		CE0KMAVSL470	ELECTROLYTIC CAP. 47μF/6.3V M H7
	C535		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C536		CHD1JJ3CH561	CHIP CERAMIC CAP. CH J 560pF/50V
	C538		CHD1JJ3CH181	CHIP CERAMIC CAP. CH J 180pF/50V
	C539		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C540		CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V
	C541		CHD1JJ3CH180	CHIP CERAMIC CAP. CH J 18pF/50V
	C542		CHD1JJ3CH180	CHIP CERAMIC CAP. CH J 18pF/50V
	C543		CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C544		CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C545		CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C546		CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C547		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C548		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C549		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1μF/50V M H7
	C550		CE0KMAVSL101	ELECTROLYTIC CAP. 100μF/ 6.3V H7
	C553		CE1AMAVSL220	ELECTROLYTIC CAP. 22μF/10V M H7
	C554		CE0KMAVSL101	ELECTROLYTIC CAP. 100μF/ 6.3V H7
	C555		CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V
	C560		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C611		CE1JMASSL220	ELECTROLYTIC CAP. 22μF/50V M H7
	C612		CHD1JK30B472	CHIP CERAMIC CAP.(1608) B K 4700pF/50V
	C614		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C615		CE0KMAVSL101	ELECTROLYTIC CAP. 100μF/ 6.3V H7
	C616		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1500		CE1CMASDL470	ELECTROLYTIC CAP. 47μF/16V M
	C1501		CE0KMASDL470	ELECTROLYTIC CAP. 47μF/6.3V M
	C1502		CE0KMAVSL470	ELECTROLYTIC CAP. 47μF/6.3V M H7
	C1503		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C1506		CE1CMASDL470	ELECTROLYTIC CAP. 47μF/16V M
	C1507		CE1CMASDL100	ELECTROLYTIC CAP. 10μF/16V M
	C1508		CCA1EKT0B104	CERAMIC CAP.(AX) B K 0.1μF/ 25V
	C1509		CE1CMASDL100	ELECTROLYTIC CAP. 10μF/16V M
	C1510		CE1CMASDL100	ELECTROLYTIC CAP. 10μF/16V M
	C1511		CE1CMASDL221	ELECTROLYTIC CAP. 220μF/ 16V M
	C1512		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C1513		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1517		CE1CMASDL470	ELECTROLYTIC CAP. 47μF/16V M
	C1518		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V

⚠	Location No.	TSB P/N	Reference No.	Description
	C1519		CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1μF/ 10V
	C1520		CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1μF/ 10V
	C1521		CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1μF/ 10V
	C1524		CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V
	C1525		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C1526		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1527		CE1EMASDL470	ELECTROLYTIC CAP. 47μF/25V M
	C1528		CE1CMASDL101	ELECTROLYTIC CAP. 100μF/ 16V M
	C1529		CE0KMASDL471	ELECTROLYTIC CAP. 470μF/ 6.3V M
	C1530		CE1CMASDL220	ELECTROLYTIC CAP. 22μF/16V M
	C1532		CE1CMASDL100	ELECTROLYTIC CAP. 10μF/16V M
	C1533		CE0KMASDL101	ELECTROLYTIC CAP. 100μF/ 6.3V M
	C1534		CE0KMAVSL101	ELECTROLYTIC CAP. 100μF/ 6.3V H7
	C1535		CE1CMASDL100	ELECTROLYTIC CAP. 10μF/16V M
	C1536		CE1CMASDL100	ELECTROLYTIC CAP. 10μF/16V M
	C1537		CE0KMASSL221	ELECTROLYTIC CAP. 220μF/ 6.3V M H7
	C1538		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1539		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1540		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1541		CE0KMASSL101	ELECTROLYTIC CAP. 100μF/ 6.3V M H7
	C1542		CE1CMASDL101	ELECTROLYTIC CAP. 100μF/ 16V M
	C1543		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1544		CE0KMAVSL470	ELECTROLYTIC CAP. 47μF/6.3V M H7
	C1546		CHD1JZ30F103	CHIP CERAMIC CAP. F Z 0.01μF/50V
	C1547		CE1CMASDL470	ELECTROLYTIC CAP. 47μF/16V M
	C1548		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1549		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1550		CP0KMASNC101	ELECTROLYTIC CAP. 100μF/ 6.3V M NP
	C1551		CHD1JJ3CH330	CHIP CERAMIC CAP.(1608) CH J 33pF/50V
	C1552		CHD1JJ3CH330	CHIP CERAMIC CAP.(1608) CH J 33pF/50V
	C1553		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1554		CE1CMASDL100	ELECTROLYTIC CAP. 10μF/16V M
	C1555		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1556		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C1557		CE1CMASDL470	ELECTROLYTIC CAP. 47μF/16V M
	C1558		CHD1JJ3CH101	CHIP CERAMIC CAP.(1608) CH J 100pF/50V
	C1560		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1563		CE1CMASDL101	ELECTROLYTIC CAP. 100μF/ 16V M
	C1564		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C1565		CE0KMASDL101	ELECTROLYTIC CAP. 100μF/ 6.3V M

⚠	Location No.	TSB P/N	Reference No.	Description
	C1566		CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1567		CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1569		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/ 6.3V M
	C1571		CE1EMAVSL4R7	ELECTROLYTIC CAP. 4.7µF/25V M H7
	C1572		CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1573		CE1CMASDL100	ELECTROLYTIC CAP. 10µF/16V M
	C1574		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1575		CDA1EKP0X183	SEMICONDUCTOR CAP. SR K 0.018µF/25V
	C1576		CHD1JJ3CH471	CHIP CERAMIC CAP.(1608) CH J 470pF/50V
	C1577		CHD1JJ3CH471	CHIP CERAMIC CAP.(1608) CH J 470pF/50V
	C1578		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1580		CE1CMASDL220	ELECTROLYTIC CAP. 22µF/16V M
	C1581		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1582		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1583		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1584		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1585		CE0KMASDL101	ELECTROLYTIC CAP. 100µF/ 6.3V M
	C1586		CHD1JJ3CH680	CHIP CERAMIC CAP.(1608) CH J 68pF/50V
	C1587		CE0KMASDL101	ELECTROLYTIC CAP. 100µF/ 6.3V M
	C1588		CHD1JJ3CH680	CHIP CERAMIC CAP.(1608) CH J 68pF/50V
	C1589		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1590		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1591		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1592		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1593		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1594		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1595		CE1CMAVSL220	ELECTROLYTIC CAP. 22µF/16V M H7
	C1596		CE1CMASDL220	ELECTROLYTIC CAP. 22µF/16V M
	C1597		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1598		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C1599		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1600		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1601		CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C1602		CE1CMAVSL100	ELECTROLYTIC CAP. 10µF/16V M H7
	C1603		CE1JMAVSL1R0	ELECTROLYTIC CAP. 1µF/50V M H7
	C1604		CP1JMAVSB1R0	ELECTROLYTIC CAP. 1µF/50V M H7 NP
	C1605		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/ 6.3V M
	C1606		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/ 6.3V M
	C1607		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/ 6.3V M
	C1608		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V

⚠	Location No.	TSB P/N	Reference No.	Description
	C1609		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1610		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1611		CE0KMAVSL470	ELECTROLYTIC CAP. 47µF/6.3V M H7
	C1612		CE0KMAVSL101	ELECTROLYTIC CAP. 100µF/ 6.3V H7
	C1613		CHD1JJ3CH102	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V
	C1614		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/ 6.3V M
	C1615		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/ 6.3V M
	C1616		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/ 6.3V M
	C1617		CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1µF/25V
	C1618		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/ 6.3V M
	C1619		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1620		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1621		CE1JMASDL100	ELECTROLYTIC CAP. 10µF/50V M
	C1623		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1626		CHD1CZ30F224	CHIP CERAMIC CAP. F Z 0.22µF/16V
	C1627		CHD1CZ30F224	CHIP CERAMIC CAP. F Z 0.22µF/16V
	C1628		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1629		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1630		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01µF/50V
	C1631		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1632		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1633		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1634		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1µF/50V
	C1635		CE1JMASDLR33	ELECTROLYTIC CAP. 0.33µF/ 50V M
	C1636		CE0KMASDL101	ELECTROLYTIC CAP. 100µF/ 6.3V M
	C1637		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1639		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1640		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1643		CE0KMASDL470	ELECTROLYTIC CAP. 47µF/6.3V M
	C1645		CHD1JJ3CH680	CHIP CERAMIC CAP.(1608) CH J 68pF/50V
	C1648		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1649		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1651		CHD1JJ3CH680	CHIP CERAMIC CAP.(1608) CH J 68pF/50V
	C1655		CHD1JJ3CH120	CHIP CERAMIC CAP. CH J 12pF/50V
	C1657		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1658		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1659		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1660		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1661		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M
	C1662		CE1JMASDL1R0	ELECTROLYTIC CAP. 1µF/50V M

⚠	Location No.	TSB P/N	Reference No.	Description
	C1663		CHD1EK30B104	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V
	C1664		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C1665		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1671		CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1672		CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1673		CE1CMASDL470	ELECTROLYTIC CAP. 47μF/16V M
	C1675		CE1EMASDL470	ELECTROLYTIC CAP. 47μF/25V M
	C1677		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1680		CHD1JK30B102	CHIP CERAMIC CAP.(1608) B K 1000pF/50V
	C1681		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C1684		CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1685		CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1686		CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1687		CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1688		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C1689		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C1691		CHD1JJ3CH470	CHIP CERAMIC CAP.(1608) CH J 47pF/50V
	C1692		CE0KMASDL471	ELECTROLYTIC CAP. 470μF/ 6.3V M
	C1693		CE0KMASDL471	ELECTROLYTIC CAP. 470μF/ 6.3V M
	C1694		CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1μF/ 10V
	C1695		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C1696		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C1697		CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1698		CE1EMASDL4R7	ELECTROLYTIC CAP. 4.7μF/25V M
	C1699		CHD1JJ3CH470	CHIP CERAMIC CAP.(1608) CH J 47pF/50V
	C1700		CHD1AZ30F105	CHIP CERAMIC CAP. F Z 1μF/ 10V
	C1701		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C1702		CE1CMAVSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	CONNECTORS			
	CN1503		J3PHC02JG017	PH CONNECTOR (WHITE) TOP 2P B2B-PH-K-S(LF)
	CN1504		JC96J34ER007	CONNECTOR FFC 34P IMSA-9615S-34A-PP-A
	CN1505		JCFEJ08JG001	FE CONNECTOR TOP 8P 08FE-BT-VK-N
	CN1506		E3B02AFV	AFV BOARD ASSEMBLY E3B02FD
	DIODES			
	D301		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D370		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D371		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D502		NPQZ10GDS957	LED(GREEN) 204-10GD/S957
	D503		NPQZ10GDS957	LED(GREEN) 204-10GD/S957
	D509		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D510		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D511		QDTA0MTZJ7R5	ZENER DIODE MTZJT-777.5A

⚠	Location No.	TSB P/N	Reference No.	Description
	D512		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D555		QPQPS1R563ST	LED SIR-563ST3F P
	D1501		NDLZ001N5397	DIODE 1N5397-B
	D1502		NDLZ001N5397	DIODE 1N5397-B
	D1503		NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1506		NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1507		NDQZ001N4005	RECTIFIER DIODE 1N4005
	D1508		QDTC0MTZJ4R3	ZENER DIODE MTZJT-774.3C
	D1511		QDTB00MTZJ10	ZENER DIODE MTZJT-7710B
	D1512		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1513		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1516		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1517		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1518		QDTB00MTZJ18	ZENER DIODE MTZJT-7718B
	D1519		QDTB00MTZJ11	ZENER DIODE MTZJT-7711B
	D1521		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1523		QDTB0MTZJ5R6	ZENER DIODE MTZJT-775.6B
	D1525		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1526		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1528		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1529		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1531		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1532		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1534		QDTB00MTZJ33	ZENER DIODE MTZJT-7733B
	D1535		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1537		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1538		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1539		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1540		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1542		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1548		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1549		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	ICS			
	IC301	P000465590	QSZBA0RSY020	IC Y/C/A LA71750EM-MPB-E
	IC370	P000465860	QSZBA0TSY019	IC SECAM LA70100M-TRM-E
	IC451	P000465600	QSZBA0RSY033	IC HIFI LA72648M-MPB-E
	IC501	P000490040	QSZAA0RHT150	IC SYSCON M3776AMCH-AG1GP
	IC612	P000465560	NSZBA0RG2009	VFD DRIVER IC PT6315(L)
	IC1501	P000457200	NSZBA0TTY091	IC SWITCHING CD4052BNSR
	IC1504	P000457260	QSZBA0SSH054	VOLTAGE REGULATOR PQ070XF01SZH
	IC1505	P000457260	QSZBA0SSH054	VOLTAGE REGULATOR PQ070XF01SZH
	IC1506	P000468640	NSZBA0S2H003	IC OP AMP UTC4580 DIP-8 8PIN
	IC1507	P000457280	QSZBA0TMM150	VIDEO SWITCH MM1697AJBE
	IC1508	P000465630	QSZBA0TTS163	IC SWITCH TC4053BF(EL N F)
	IC1509	P000465630	QSZBA0TTS163	IC SWITCH TC4053BF(EL N F)
	IC1510	P000465630	QSZBA0TTS163	IC SWITCH TC4053BF(EL N F)
	IC1511	P000490050	QSZBA0TSY049	IC VPS/PDC SLICER LC74793NJM-TLM-E
	IC1513	P000459910	NSZBA0SJY035	IC OP AMP KIA4558P/P
	IC1514	P000457270	QSZBA0TMM102	DRIVER FOR DVD MM1637XVBE
	IC1515	P000465610	QSZBA0TMM108	DRIVER FOR DVD MM1636XWRE
	IC1516	P000457270	QSZBA0TMM102	DRIVER FOR DVD MM1637XVBE
	IC1518	P000465620	QSZBA0TMM152	AV SWITCH MM1443XJBE
	COILS			
	L251		LLAXKATTU5R6	INDUCTOR 5.6μH-K-26T
	L302		LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L370		JW5.0T	BOARD JUMPER D0.6-P5.0

⚠	Location No.	TSB P/N	Reference No.	Description
	L402		LLARKBSTU470	INDUCTOR 47μH-K-5FT
	L451		LLARKBSTU470	INDUCTOR 47μH-K-5FT
	L452		JW5.0T	BOARD JUMPER D0.6-P5.0
	L501		LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L502		JW5.0T	BOARD JUMPER D0.6-P5.0
	L503		LLAXKATTU1R8	INDUCTOR 1.8μH-K-26T
	L1501		LLBD00PKV023	RADIAL TYPE CHOKE COIL CW68-470K-841040NP
	L1503		JW5.0T	BOARD JUMPER D0.6-P5.0
	L1504		JW5.0T	BOARD JUMPER D0.6-P5.0
	L1505		LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L1506		JW5.0T	BOARD JUMPER D0.6-P5.0
	L1507		LLBD00PKV023	RADIAL TYPE CHOKE COIL CW68-470K-841040NP
	L1508		LLAXKATTU100	INDUCTOR 10μH-K-26T
	L1509		LLAXKATTU101	INDUCTOR(100μH K) LAP02TA101K
	L1510		LLBD00PKV023	RADIAL TYPE CHOKE COIL CW68-470K-841040NP
	L1513		LLAXKATTUR47	INDUCTOR(0.47μH K) LAP02TAR47K
	L1515		---------	BEAD CORE ASSEMBLY E9GA0BD
	L1515-1		JW35.0T	BOARD JUMPER D0.6-P35.0
	L1515-2		XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1517		JW5.0T	BOARD JUMPER D0.6-P5.0
			TRANSISTORS	
	Q301		NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q302		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q401		QQ2Z0RN1511F	CHIP TRANSISTOR RN1511(TE85R.F)
	Q403		NQSYKTC3203P	TRANSISTOR KTC3203-Y-AT/P
	Q404		NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q405		NQSZ0KRA103M	RES. BUILT-IN TRANSISTOR KRA103M-AT/P
	Q406		NQ1YKTC3875S	CHIP TRANSISTOR KTC3875S-Y-RTK/P
	Q451		NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q506		NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12
	Q513		NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q514		NQS5KTC3199P	TRANSISTOR KTC3199-BL-AT/P
	Q515		NQS5KTC3199P	TRANSISTOR KTC3199-BL-AT/P
	Q516		NQ14KTC3875S	CHIP TRANSISTOR KTC3875S-GR-RTK/P
	Q517		NQ14KTC3875S	CHIP TRANSISTOR KTC3875S-GR-RTK/P
	Q518		NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q519		NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1501		NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1502		NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1507		NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q1508		NQVYKTA1281P	TRANSISTOR KTA1281Y-AT/P
	Q1509		NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1510		NQSYKTC3205P	TRANSISTOR KTC3205-Y-AT/P
	Q1511		NQSYKTA1273P	TRANSISTOR KTA1273-Y-AT/P
	Q1512		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1513		NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1514		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1515		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1516		NQSZ0KRA104M	RES. BUILT-IN TRANSISTOR KRA104M-AT/P

⚠	Location No.	TSB P/N	Reference No.	Description
	Q1517		NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1518		NQSYKTC3205P	TRANSISTOR KTC3205-Y-AT/P
	Q1519		NQSZKRC103MP	NPN TRANSISTOR KRC103M-AT/P
	Q1520		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1521		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1522		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1524		NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1525		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1527		NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1528		NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1529		NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1530		NQ1YKTC3875S	CHIP TRANSISTOR KTC3875S-Y-RTK/P
	Q1531		NQ1ZKRC103SP	TRANSISTOR KRC103S-RTK/P
	Q1532		NQS4KTA1266P	TRANSISTOR KTA-1266-GR-AT/P
	Q1533		NQ1YKTC3879P	TRANSISTOR KTC3879-Y-RTK/P
	Q1534		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1537		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1538		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1539		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1540		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q1542		NQSYKTC3198P	TRANSISTOR KTC3198-Y-AT/P
			RESISTORS	
	R251		RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R252		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R301		RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R303		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R305		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R308		RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R310		JW5.0T	BOARD JUMPER D0.6-P5.0
	R312		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R314		RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R316		RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R319		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R320		RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R321		RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R322		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R323		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R324		RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R325		RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R326		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R327		RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R328		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R330		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R331		RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R332		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R333		RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R334		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R335		RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R336		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R337		RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R345		RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R346		RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R370		RRXAJR5Z0272	CHIP RES. 1/10W J 2.7k Ω
	R371		RCX6JATZ0562	CARBON RES. 1/6W J 5.6k Ω
	R372		RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R401		RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R402		RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R404		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R405		RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R406		RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R407		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R408		RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R409		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω

⚠	Location No.	TSB P/N	Reference No.	Description
	R410		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R411		RRXAJR5Z0273	CHIP RES. 1/10W J 27k Ω
	R412		RRXAJR5Z0121	CHIP RES. 1/10W J 120 Ω
	R413		RRXAJR5Z0334	CHIP RES. 1/10W J 330k Ω
	R414		RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R415		RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R416		RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R417		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R418		RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R419		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R420		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R421		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R451		RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R452		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R453		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R454		RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R462		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R463		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R464		RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R465		RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R466		RRXAJR5Z0822	CHIP RES. 1/10W J 8.2k Ω
	R467		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R469		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R470		RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R479		RRXAJR5Z0330	CHIP RES. 1/10W J 33 Ω
	R480		RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R481		RRXAJR5Z0330	CHIP RES. 1/10W J 33 Ω
	R482		RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R483		RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R484		RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R509		RRXAJR5Z0181	CHIP RES. 1/10W J 180 Ω
	R510		RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R511		RCX6GATZ0362	CARBON RES. 1/6W G 3.6k Ω
	R512		RRXAJR5Z0683	CHIP RES. 1/10W J 68k Ω
	R513		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R514		RCX6GATZ0103	CARBON RES. 1/6W G 10k Ω
	R516		RCX6GATZ0471	CARBON RES. 1/6W G 470 Ω
	R517		RCX4JATZ0271	CARBON RES. 1/4W J 270 Ω
	R519		RCX6GATZ0223	CARBON RES. 1/6W G 22k Ω
	R523		RCX6GATZ0152	CARBON RES. 1/6W G 1.5k Ω
	R525		RRXAJR5Z0394	CHIP RES. 1/10W J 390k Ω
	R526		RCX6JATZ0394	CARBON RES. 1/6W J 390k Ω
	R528		RCX6GATZ0472	CARBON RES. 1/6W G 4.7k Ω
	R536		RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R537		RRXAJR5Z0681	CHIP RES. 1/10W J 680 Ω
	R539		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R540		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R541		RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R542		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R543		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R544		RCX4JATZ0103	CARBON RES. 1/4W J 10k Ω
	R545		RCX4JATZ0103	CARBON RES. 1/4W J 10k Ω
	R546		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R553		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R555		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R567		RRXAJR5Z0393	CHIP RES. 1/10W J 39k Ω
	R568		RRXAJR5Z0224	CHIP RES. 1/10W J 220k Ω
	R569		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R570		RCX6JATZ0472	CARBON RES. 1/6W J 4.7k Ω
	R572		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R574		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R575		RRXAJR5Z0334	CHIP RES. 1/10W J 330k Ω
	R577		RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R578		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R581		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R582		RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω

⚠	Location No.	TSB P/N	Reference No.	Description
	R583		RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R584		RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R585		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R586		RRXAJR5Z0821	CHIP RES. 1/10W J 820 Ω
	R588		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R595		RCX4JATZ0103	CARBON RES. 1/4W J 10k Ω
	R596		RCX6JATZ0151	CARBON RES. 1/6W J 150 Ω
	R597		RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R598		RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R601		RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R602		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R603		RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R604		RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R605		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R606		RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R607		RRXAJR5Z0822	CHIP RES. 1/10W J 8.2k Ω
	R608		RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R617		JW5.0T	BOARD JUMPER D0.6-P5.0
	R618		RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R621		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R622		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R623		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R624		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R625		RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R626		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R627		RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R628		RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R629		RCX4JATZ0222	CARBON RES. 1/4W J 2.2k Ω
	R630		RRXAJR5Z0392	CHIP RES. 1/10W J 3.9k Ω
	R631		RRXAJR5Z0822	CHIP RES. 1/10W J 8.2k Ω
	R632		RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R643		RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R644		RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R645		RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R646		RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R647		RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R648		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R649		RRXAJR5Z0561	CHIP RES. 1/10W J 560 Ω
	R650		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R651		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R653		RCX6JATZ0272	CARBON RES. 1/6W J 2.7k Ω
	R654		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R655		RCX6JATZ0272	CARBON RES. 1/6W J 2.7k Ω
	R656		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R657		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1016		RCX4JATZ0103	CARBON RES. 1/4W J 10k Ω
	R1500		RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1501		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1502		JW5.0T	BOARD JUMPER D0.6-P5.0
	R1504		RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1505		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R1507		RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1510		RCX4JATZ0471	CARBON RES. 1/4W J 470 Ω
	R1512		RCX4JATZ0471	CARBON RES. 1/4W J 470 Ω
	R1513		RCX6JATZ0273	CARBON RES. 1/6W J 27k Ω
	R1514		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1519		JW5.0T	BOARD JUMPER D0.6-P5.0
	R1522		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1523		RCX4JATZ0391	CARBON RES. 1/4W J 390 Ω
	R1524		RCX6JATZ0473	CARBON RES. 1/6W J 47k Ω
	R1525		RCX6JATZ0821	CARBON RES. 1/6W J 820 Ω
	R1526		RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R1527		RCX4JATZ0681	CARBON RES. 1/4W J 680 Ω
	R1528		RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1529		RCX6JATZ0152	CARBON RES. 1/6W J 1.5k Ω
	R1530		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω

⚠	Location No.	TSB P/N	Reference No.	Description
	R1531		RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R1532		RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R1533		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1536		RCX4JATZ0152	CARBON RES. 1/4W J 1.5k Ω
	R1537		RCX4JATZ0152	CARBON RES. 1/4W J 1.5k Ω
	R1538		RCX4JATZ0331	CARBON RES. 1/4W J 330 Ω
	R1539		RCX4JATZ0122	CARBON RES. 1/4W J 1.2k Ω
	R1540		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1541		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1543		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1544		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1547		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1550		RCX6JATZ0472	CARBON RES. 1/6W J 4.7k Ω
	R1551		RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1552		RRXAFR5H1002	CHIP RES. 1/10W F 10k Ω
	R1553		RRXAJR5Z0473	CHIP RES. 1/10W J 47k Ω
	R1554		RCX4JATZ0270	CARBON RES. 1/4W J 27 Ω
	R1555		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1556		RRXAFR5H1502	CHIP RES. 1/10W F 15k Ω
	R1557		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1558		RRXAFR5H4701	CHIP RES. 1/10W F 4.7k Ω
	R1559		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1560		RRXAJR5Z0152	CHIP RES. 1/10W J 1.5k Ω
	R1561		RRXAFR5H8200	CHIP RES. 1/10W F 820 Ω
	R1562		RRXAFR5H1501	CHIP RES. 1/10W F 1.5k Ω
	R1563		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1564		RCX6JATZ0223	CARBON RES. 1/6W J 22k Ω
	R1565		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1566		RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1567		RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1568		RCX6JATZ0332	CARBON RES. 1/6W J 3.3k Ω
	R1569		RCX6JATZ0332	CARBON RES. 1/6W J 3.3k Ω
	R1570		RCX6JATZ0332	CARBON RES. 1/6W J 3.3k Ω
	R1571		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1572		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1573		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1574		JW5.0T	BOARD JUMPER D0.6-P5.0
	R1576		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1578		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1579		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1581		RCX4JATZ0822	CARBON RES. 1/4W J 8.2k Ω
	R1582		RCX4JATZ0822	CARBON RES. 1/4W J 8.2k Ω
	R1587		RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1589		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1590		RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1591		RRXAJR5Z0302	CHIP RES. 1/10W J 3k Ω
	R1592		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1593		RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R1594		RRXAJR5Z0302	CHIP RES. 1/10W J 3k Ω
	R1595		RRXAJR5Z0123	CHIP RES. 1/10W J 12k Ω
	R1596		RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1597		RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1598		RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1599		RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1600		RRXAFR5H2700	CHIP RES. 1/10W F 270 Ω
	R1603		RRXAFR5H1101	CHIP RES. 1/10W F 1.1k Ω
	R1604		JW5.0T	BOARD JUMPER D0.6-P5.0
	R1605		RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1606		RRXAFR5H2200	CHIP RES. 1/10W F 220 Ω
	R1607		RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R1608		RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1609		RRXAJR5Z0151	CHIP RES. 1/10W J 150 Ω
	R1610		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1611		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1612		RRXAJR5Z0472	CHIP RES. 1/10W J 4.7k Ω
	R1613		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω

⚠	Location No.	TSB P/N	Reference No.	Description
	R1616		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1619		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1620		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1630		RRXAFR5H3601	CHIP RES. 1/10W F 3.6k Ω
	R1631		RRXAFR5H3601	CHIP RES. 1/10W F 3.6k Ω
	R1632		RRXAJR5Z0272	CHIP RES. 1/10W J 2.7k Ω
	R1633		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1634		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1636		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1637		RRXAFR5H1102	CHIP RES. 1/10W F 11k Ω
	R1638		RRXAFR5H1102	CHIP RES. 1/10W F 11k Ω
	R1639		RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R1640		RRXAJR5Z0332	CHIP RES. 1/10W J 3.3k Ω
	R1641		RRXAFR5H8200	CHIP RES. 1/10W F 820 Ω
	R1642		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1643		RCX6JATZ0153	CARBON RES. 1/6W J 15k Ω
	R1644		RRXAFR5H2700	CHIP RES. 1/10W F 270 Ω
	R1647		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1648		RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R1650		RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1651		RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1652		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1653		RRXAJR5Z0562	CHIP RES. 1/10W J 5.6k Ω
	R1654		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1655		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1656		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1657		RRXAJR5Z0103	CHIP RES. 1/10W J 10k Ω
	R1658		RRXAJR5Z0682	CHIP RES. 1/10W J 6.8k Ω
	R1659		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1660		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1661		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1662		RRXAJR5Z0101	CHIP RES. 1/10W J 100 Ω
	R1663		RRXAJR5Z0331	CHIP RES. 1/10W J 330 Ω
	R1664		RRXAJR5Z0331	CHIP RES. 1/10W J 330 Ω
	R1665		JW5.0T	BOARD JUMPER D0.6-P5.0
	R1666		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1669		RRXAJR5Z0182	CHIP RES. 1/10W J 1.8k Ω
	R1670		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1671		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1672		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1673		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1676		RCX4JATZ0222	CARBON RES. 1/4W J 2.2k Ω
	R1677		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1678		RCX4JATZ0331	CARBON RES. 1/4W J 330 Ω
	R1679		RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1680		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1681		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1682		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1683		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1684		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1685		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R1686		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1688		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1689		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1690		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1691		RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1692		RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R1693		RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R1694		RRXAJR5Z0104	CHIP RES. 1/10W J 100k Ω
	R1695		RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R1697		RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1698		RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1699		RRXAJR5Z0222	CHIP RES. 1/10W J 2.2k Ω
	R1700		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1702		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R1703		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω

⚠	Location No.	TSB P/N	Reference No.	Description
	R1704		RRXAJR5Z0223	CHIP RES. 1/10W J 22k Ω
	R1705		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1706		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R1708		RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R1709		RCX6JATZ0101	CARBON RES. 1/6W J 100 Ω
	R1712		RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
	R1713		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1714		RRXAJR5Z0471	CHIP RES. 1/10W J 470 Ω
	R1718		RRXAJR5Z0163	CHIP RES. 1/10W J 16k Ω
	R1719		RRXAJR5Z0163	CHIP RES. 1/10W J 16k Ω
	R1720		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1721		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1722		RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R1723		RRXAJR5Z0273	CHIP RES. 1/10W J 27k Ω
	R1724		RRXAJR5Z0153	CHIP RES. 1/10W J 15k Ω
	R1725		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
	R1726		RRXAJR5Z0183	CHIP RES. 1/10W J 18k Ω
	R1727		RRXAJR5Z0273	CHIP RES. 1/10W J 27k Ω
	R1728		RRXAJR5Z0153	CHIP RES. 1/10W J 15k Ω
	R1729		RRXAJR5Z0333	CHIP RES. 1/10W J 33k Ω
			SWITCHES	
	SW506	P000465640	SSC0101MCE03	LEAF SWITCH MXS01830MVP0
	SW507	P000480780	SSR0106KB004	SWITCH ROTARY SSS-53MD-1
	SW521	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW522	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW523	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW524	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW525	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW526	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW527	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW528	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW601	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW603	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
	SW605	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A
			MISCELLANEOUS	
	2B16		0VM409508	BUSH LED(F) H3700UD
	2B17		1VM425280	SHIELD ASSEMBLY(T3 PAL) E3B90ED
	2B46		0VM304573	ROHM HOLDER H7770JD
	FL601	P000490060	TVFD1C0FT056	FL 7-BT-310N
	JK1501	P000465540	JXRL030LY116	JACK RCA MSP-213V1-652-B NI L
	JK1502	P000459850	JXGL210LY008	RGB CONNECTOR MRC-021V-05 ABS(B110
	JK1504	P000465520	JXRL010LY140	JACK RCA MSP-281V41-B(B110)
	JK1505	P000465530	JXRL020LY120	JACK RCA MSP-382V-12 NILF
	JK1506	P000457070	JXEL040LY003	JACK S TYPE MDC-050V-2.4 LF(B110
	JW001		WX1E9B00-007	FLAT CABLE 4P AWG26#2651/ P2.0/100
	JW101		WX1E9G00-002	FFC CABLE 30P FFC/P1.00/150
	JW102		WX1E9G00-002	FFC CABLE 30P FFC/P1.00/150
	PS502		QPWZP1302C70	PHOTO INTERRUPTER RPI-302C70
	RM1501	P000457340	USESJRSKK039	REMOTE RECEIVER PIC-37043LU
	TP301		JW17.0T	BOARD JUMPER D0.6-P17.0
	TP501		JW5.0T	BOARD JUMPER D0.6-P5.0
	TP503		JW7.0T	BOARD JUMPER D0.6-P7.0
	TP504		JW25.5T	BOARD JUMPER D0.6-P25.5
⚠	TU1501	P000484150	UTUNPSLAL007	TUNER UNIT TMFE2-405A
	VR501		VRCB104HH014	CARBON P.O.T. VZ067TL1 B104 PB(F)
	X301	P000468200	FXC445LLN004	XTAL 4.433619MHz
	X501	P000468220	FXD126LCHE01	QUARTS CRYSTAL 12.000000MHz
	X502	P000483780	FXC323LQUA03	RESONATOR XTAL 32.768kHz QTF38-32.768K125P15L

BOARD POWER SWITCH

⚠	Location No.	TSB P/N	Reference No.	Description
			---------	BOARD POWER SWITCH (MCV-B) Consists of the following:
			DIODE	
	D673		NPQZ1CHJGTNN	LED(GREEN) LTL1CHJGTNN
			SWITCH	
	SW673	P000483300	SST0101AL041	TACT SWITCH SKQSAF001A

BOARD FUNCTION

⚠	Location No.	TSB P/N	Reference No.	Description
			---------	BOARD FUNCTION (MCV-C) Consists of the following:
			SWITCHES	
	SW681	P000472800	SST0101HH013	TACT SWITCH KSM0614B
	SW682	P000472800	SST0101HH013	TACT SWITCH KSM0614B
			MISCELLANEOUS	
	JW002		WX1E9B00-004	FLAT CABLE 3P AWG26#2651/ P2.0/80

BOARD FRONT JACK

⚠	Location No.	TSB P/N	Reference No.	Description
			---------	BOARD FRONT JACK (MCV-D) Consists of the following:
			CAPACITORS	
	C1205		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
	C1206		CHD1JK30B222	CHIP CERAMIC CAP. B K 2200pF/50V
			CONNECTOR	
	CN1201		JCFEJ08JG001	FE CONNECTOR TOP 8P 08FE-BT-VK-N
			DIODES	
	D1544		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1545		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1546		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D1547		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
			RESISTORS	
	R1201		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1202		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
	R1203		RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1204		RRXAJR5Z0221	CHIP RES. 1/10W J 220 Ω
	R1205		RRXAJR5Z0750	CHIP RES. 1/10W J 75 Ω
			MISCELLANEOUS	
	JK1201	P000465500	JXRL010LY101	JACK RCA(YELLOW) MTJ-032-11B-40 FE01
	JK1202	P000465510	JXRL010LY102	JACK RCA(WHITE) MTJ-032-11B-41 FE01
	JK1203	P000465490	JYRL010LY024	JACK RCA(RED) MTJ-032-11A-31 FE01
	JK1204	P000457070	JXEL040LY003	JACK S TYPE MDC-050V-2.4 LF(B110
	JW103		WX1E9700-002	FFC CABLE 8P FFC/P1.25/120

BOARD SENSOR

⚠	Location No.	TSB P/N	Reference No.	Description
	P4	P000465450	1VSA11699	BOARD SENSOR Consists of the following:
			TRANSISTORS	
	Q503		NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12
	Q504		NPWZT2046B12	PHOTO TRANSISTOR PT204-6B-12

BOARD PSV

⚠	Location No.	TSB P/N	Reference No.	Description
⚠	P3	P000490220	1VSA15826	BOARD PSV Consists of the following
			---------	BOARD POWER SUPPLY (PSV-A)
			---------	BOARD REAR JACK (PSV-B)

BOARD POWER SUPPLY

⚠	Location No.	TSB P/N	Reference No.	Description
			---------	BOARD POWER SUPPLY (PSV-A) Consists of the following:
		CAPACITORS		
	C013		CE1JMASDL100	ELECTROLYTIC CAP. 10µF/50V M
	C014		CE1CMASDL471	ELECTROLYTIC CAP. 470µF/16V M
	C015		CE1CMASDL101	ELECTROLYTIC CAP. 100µF/16V M
	C016		CE0KMZADL222	ELECTROLYTIC CAP. 2200µF/6.3V SL
	C017		CE0KMZADL222	ELECTROLYTIC CAP. 2200µF/6.3V SL
	C018		CE0KMASDL471	ELECTROLYTIC CAP. 470µF/6.3V M
	C020		CE1JMASDL220	ELECTROLYTIC CAP. 22µF/50V M
	C022		CE1GMASDL471	ELECTROLYTIC CAP. 470µF/35V M
⚠	C1001		CT2E683DC016	ACROSS THE LINE CAP. 0.068µF/250V
	C1004		CA2H101S6016	ELECTROLYTIC CAP. 100µF/400V M
	C1005		CCD3AKPSL560	CERAMIC CAP. SL K 56pF/1KV
⚠	C1006		CCN2EMA0E222	SAFTY CAP. 2200pF/250V
	C1007		CE0KMASDL102	ELECTROLYTIC CAP. 1000µF/6.3V M
	C1013		CCA1JJT0B102	CERAMIC CAP.(AX) B J 1000pF/50V
	C1018		CE1AMASDL101	ELECTROLYTIC CAP. 100µF/10V M
	C1021		CCA1CMT0Y103	CERAMIC CAP.(AX) Y M 0.01µF/16V
	C1025		CCA1JKT0B103	CERAMIC CAP.(AX) B K 0.01µF/50V
	C1029		CCA1CKT0X182	CERAMIC CAP.(AX) X K 1800pF/16V
	C1032		CE1CMASDL470	ELECTROLYTIC CAP. 47µF/16V M
	C1033		CCD1JZSYV223	CERAMIC CAP. YV Z 0.022µF/50V
	C1035		CE0KMZADL332	ELECTROLYTIC CAP. 3300µF/6.3V SL
	C1036		CCD2JKP0B471	CERAMIC CAP. B K 470pF/500V
	C1037		CE1CMASDL102	ELECTROLYTIC CAP. 1000µF/16V M
	C1039		CE1CMASDL471	ELECTROLYTIC CAP. 470µF/16V M
	C1106		CE1GMASDL101	ELECTROLYTIC CAP. 100µF/35V M
	C2014		CCD2JKP0B103	CERAMIC CAP. B K 0.01µF/500V
		DIODES		
	D013		NDQZ000BA158	RECTIFIER DIODE BA158
	D014		NDQZ000SB190	SCHOTTKY BARRIER DIODE SB190
	D015		QDTB0MTZJ6R8	ZENER DIODE MTZJT-776.8B
	D016		NDQZ000SB340	SCHOTTKY BARRIER DIODE SB340
	D017		QDTC00MTZJ15	ZENER DIODE MTZJT-7715C
	D018		NDQZ000BA158	RECTIFIER DIODE BA158
	D019		NDQZ000FR203	RECTIFIER DIODE FR203-B/P
	D1001		NDLZ001N5397	DIODE 1N5397-B
	D1002		NDLZ001N5397	DIODE 1N5397-B
	D1003		NDLZ001N5397	DIODE 1N5397-B
	D1004		NDLZ001N5397	DIODE 1N5397-B
	D1006		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1008		NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1011		NDQZ000BA159	RECTIFIER DIODE BA159
	D1012		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1016		NDQZ000SB140	SCHOTTKY BARRIER DIODE SB140
	D1017		QDTA00MTZJ20	ZENER DIODE MTZJT-7720A
	D1018		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1019		QDTB0MTZJ6R8	ZENER DIODE MTZJT-776.8B
	D1022		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1023		JW5.0T	BOARD JUMPER D0.6-P5.0
	D1024		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1025		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
	D1030		NDQZ000SB240	SCHOTTKY BARRIER DIODE SB240-B/P
	D1031		NDQZ000SB390	SCHOTTKY BARRIER DIODE SB390
	D1032		NDQZ000SB340	SCHOTTKY BARRIER DIODE SB340
		IC		
⚠	IC1001	P000459900	NPEA000EL817	PHOTOCOUPLER EL817A
		COILS		
	L010		LLBD00PKV023	RADIAL TYPE CHOKE COIL CW68-470K-841040NP
	L013		LLBD00PKV023	RADIAL TYPE CHOKE COIL CW68-470K-841040NP
	L1001		---------	BEAD CORE ASSEMBLY E9GA0BD
	L1001-1		JW20.0T	BOARD JUMPER D0.6-P20.0
	L1001-2		XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1002		---------	BEAD CORE ASSEMBLY E9GA0BD
	L1002-1		JW20.0T	BOARD JUMPER D0.6-P20.0
	L1002-2		XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
⚠	L1003		LLBG00ZTU022	LINE FILTER 56MH TLF14CB5630R2
	L1004		XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1005		---------	BEAD CORE ASSEMBLY E9GA0BD
	L1005-1		JW20.0T	BOARD JUMPER D0.6-P20.0
	L1005-2		XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	L1011		LLBD00PKV023	RADIAL TYPE CHOKE COIL CW68-470K-841040NP
	L1013		LLF1800KV002	POWER INDUCTORS CWKBNP-180K
		TRANSISTORS		
⚠	Q1001		QFWZ02SK3566	FET 2SK3566
	Q1003		QQSY2SC1815F	TRANSISTOR 2SC1815-Y(TE2 F T)
	Q1004		NQSYKTA1267P	TRANSISTOR KTA1267-Y-AT/P
	Q1008		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
		RESISTORS		
	R057		RCX6JATZ0224	CARBON RES. 1/6W J 220k Ω
⚠	R1001		RCX2565FS001	CARBON RES. 1/2W K 5.6M Ω
	R1002		RCX4JATZ0564	CARBON RES. 1/4W J 560k Ω
	R1003		RCX4JATZ0684	CARBON RES. 1/4W J 680k Ω
	R1004		RN02JZLZ0823	METAL OXIDE FILM RES. 2W J 82k Ω
	R1005		RCX4JATZ0105	CARBON RES. 1/4W J 1M Ω
	R1006		RCX4JATZ0105	CARBON RES. 1/4W J 1M Ω
	R1007		RCX4JATZ0105	CARBON RES. 1/4W J 1M Ω
	R1008		RCX4GATZ0821	CARBON RES. 1/4W G 820 Ω

⚠	Location No.	TSB P/N	Reference No.	Description
	R1010		RCX6JATZ0223	CARBON RES. 1/6W J 22k Ω
	R1011		RN01JZLZ01R3	METAL OXIDE FILM RES. 1W J 1.3 Ω
	R1020		RCX6JATZ0182	CARBON RES. 1/6W J 1.8k Ω
	R1021		RCX6JATZ0102	CARBON RES. 1/6W J 1k Ω
	R1022		RCX6JATZ0472	CARBON RES. 1/6W J 4.7k Ω
	R1023		RCX6GATZ0222	CARBON RES. 1/6W G 2.2k Ω
	R1024		RCX6JATZ0683	CARBON RES. 1/6W J 68k Ω
	R1025		RCX6GATZ0562	CARBON RES. 1/6W G 5.6k Ω
	R1029		RCX6JATZ0104	CARBON RES. 1/6W J 100k Ω
	R1032		RCX6JATZ0222	CARBON RES. 1/6W J 2.2k Ω
	R1035		RCX6JATZ0102	CARBON RES. 1/6W J 1k Ω
	R1036		RCX6JATZ0104	CARBON RES. 1/6W J 100k Ω
	R1037		RCX6JATZ0103	CARBON RES. 1/6W J 10k Ω
	R1038		RCX6JATZ0104	CARBON RES. 1/6W J 100k Ω
	R1039		RCX6JATZ0474	CARBON RES. 1/6W J 470k Ω
	R1040		RCX4JATZ0100	CARBON RES. 1/4W J 10 Ω
	R1041		RCX4JATZ0100	CARBON RES. 1/4W J 10 Ω
	R1043		RN012R7ZU001	METAL OXIDE FILM RES. 1W J 2.7 Ω
	R1058		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1059		RCX4JATZ0102	CARBON RES. 1/4W J 1k Ω
	R1126		RCX6JATZ0333	CARBON RES. 1/6W J 33k Ω
	MISCELLANEOUS			
	2B18		1VM420987	HEAT SINK E6800ED
	2L019		GBJS3080	SCREW S-TIGHT M3X8 BIND HEAD+
⚠	AC1001		WAE0172LW014	POWER CORD W/O A GND WIRE CEE / 1760MM /ANTITR
⚠	F1001	P000459950	PAGC20BW3162	FUSE T1.6AL/250V
	FH1001		XH01Z00LY002	FUSE HOLDER MSF-015 LF (B110)
	FH1002		XH01Z00LY002	FUSE HOLDER MSF-015 LF (B110)
	JW1001		WX1E9G00-001	FFC CABLE 34P FFC/P1.00/110
⚠	SA1001	P000457210	NVQZ10D471KB	SURGE ABSORBER 470V+-10PER
⚠	T0011	P000490000	LTT2PE0KT023	TRANS POWER 7717

BOARD REAR JACK

⚠	Location No.	TSB P/N	Reference No.	Description
			---------	BOARD REAR JACK (PSV-B) Consists of the following:
	CAPACITORS			
	C2003		CA1J222TU011	CERAMIC CAP.(AX) B K 2200pF/50V
	C2004		CA1J222TU011	CERAMIC CAP.(AX) B K 2200pF/50V
	C2005		CA1J222TU011	CERAMIC CAP.(AX) B K 2200pF/50V
	C2006		CA1J222TU011	CERAMIC CAP.(AX) B K 2200pF/50V
	C2007		CA1J222TU011	CERAMIC CAP.(AX) B K 2200pF/50V
	C2008		CCA1JKT0B102	CERAMIC CAP.(AX) B K 1000pF/50V
	C2009		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C2010		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C2011		CCA1JKT0B102	CERAMIC CAP.(AX) B K 1000pF/50V
	C2012		CE1JMASDL1R0	ELECTROLYTIC CAP. 1μF/50V M
	C2013		CCA1JKT0B102	CERAMIC CAP.(AX) B K 1000pF/50V
	DIODES			
	D2001		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2002		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2003		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2004		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2005		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2006		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2007		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2008		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2009		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	D2010		QDTA00MTZJ11	ZENER DIODE MTZJT-7711A
	COILS			
	L2001		---------	BEAD CORE ASSEMBLY E9GA0BD
	L2001-1		JW35.0T	BOARD JUMPER D0.6-P35.0
	L2001-2		XL03010XM001	BEAD CORE B16 RH 3.5X10X1.3
	TRANSISTORS			
	Q2002		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	Q2003		NQSYKTC3199P	TRANSISTOR KTC3199-Y-AT/P
	RESISTORS			
	R2003		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R2004		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R2005		RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R2006		RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R2007		RCX4JATZ0821	CARBON RES. 1/4W J 820 Ω
	R2008		RCX4JATZ0221	CARBON RES. 1/4W J 220 Ω
	R2009		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R2010		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R2011		RCX4JATZ0750	CARBON RES. 1/4W J 75 Ω
	R2012		RCX6JATZ0102	CARBON RES. 1/6W J 1k Ω
	R2013		RCX6JATZ0102	CARBON RES. 1/6W J 1k Ω
	MISCELLANEOUS			
	2B60		1VM423185	21P PLATE EARTH E7B20ED
	JK2001	P000459840	JXGL210LY006	RGB CONNECTOR MRC-021V-03 ABS(B11
	JW2001		WX1E9G00-003	FLAT CABLE 14P AWG26#2561/P2.0/65

BOARD AFV

⚠	Location No.	TSB P/N	Reference No.	Description
	P5	P000484120	1VSA15657	BOARD AFV Consists of the following:
	CAPACITORS			
	C1		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C4		CHD1JJ3CH560	CHIP CERAMIC CAP. CH J 56pF/50V
	C5		CHD1JJ3CH220	CHIP CERAMIC CAP.(1608) CH J 22pF/50V
	C6		CHD1JJ3CH560	CHIP CERAMIC CAP. CH J 56pF/50V
	C7		CHD1JC3CH3R0	CHIP CERAMIC CAP. CH C 3pF/50V
	C8		CHD1JC3CH3R0	CHIP CERAMIC CAP. CH C 3pF/50V
	C11		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C12		CE1CMASSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C13		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C14		CHD1JK30B103	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V
	C15		CE1CMASSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C16		CE1CMASSL100	ELECTROLYTIC CAP. 10μF/16V M H7
	C17		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C19		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C20		CE1JMASSL3R3	ELECTROLYTIC CAP. 3.3μF/50V M H7
	C21		CHD1JZ30F104	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V
	C22		CE1CMASSL100	ELECTROLYTIC CAP. 10μF/16V M H7

⚠	Location No.	TSB P/N	Reference No.	Description
	C23		CHD1AZ30F474	CHIP CERAMIC CAP. F Z 0.47μF/10V
	C24		CE1JMASSLR22	ELECTROLYTIC CAP. 0.22μF/ 50V M H7
	C27		CCA1JZTFZ104	CERAMIC CAP.(AX) F Z 0.1μF/ 50V
CONNECTOR				
	CN1		JTED009ER045	ANGLE PIN HEADER 9P IMSA-6029B-1-09Z003-
DIODE				
	D2		QDTZ001SS133	SWITCHING DIODE 1SS133(T-77)
IC				
	IC1	P000459920	NSZBA0SP3005	IC AUDIO PROCESSOR MSP3417G-QG-B8-V3
COILS				
	L1		LLARKBSTU100	INDUCTOR 10μH-K-5FT
	L2		JW5.0T	BOARD JUMPER D0.6-P5.0
	L3		LLAXKATTU180	INDUCTOR 18μH-K-26T
	L4		LLARKBSTU100	INDUCTOR 10μH-K-5FT
RESISTORS				
	R1		RRXAJR5Z0102	CHIP RES. 1/10W J 1k Ω
	R2		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R4		RRXAJR5Z0124	CHIP RES. 1/10W J 120k Ω
	R5		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R6		RRXAZR5Z0000	CHIP RES.(1608) 1/10W 0 Ω
	R7		RRXAJR5Z0122	CHIP RES. 1/10W J 1.2k Ω
MISCELLANEOUS				
	X1	P000468230	FXD186LLN001	XTAL 18.432MHz

DECK MECHANISM SECTION

DVD VIDEO RECORDER & VIDEO CASSETTE RECORDER

D-VR50KF/D-VR51KF

Deck Mechanism Section

- **Standard Maintenance**
- **Mechanism Alignment Procedures**
- **Disassembly / Assembly of Mechanism**
- **Deck Exploded Views**
- **Deck Parts List**

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STANDARD MAINTENANCE

Service Schedule of Components

This maintenance chart shows you the standard of replacement and cleaning time for each part.
Because those may replace depending on environment and purpose for use, use the chart for reference.

h: Hours ○: Cleaning ●: Replace

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 h**	**2,000 h**	**3,000 h**	**4,000 h**
B2	Cylinder Assembly	○	●	○	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	ACE Head Assembly			●	
B573, B574	Reel S, Reel T			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
*B86	F Brake Assembly (HI)		●		●
B133	Idler Assembly (HI)		●		●
B410	Pinch Arm Assembly		●		●
B414	M Brake (SP) Assembly (HI)		●		●
B416	M Brake (TU) Assembly (HI)		●		●
B525	LDG Belt		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE Head) using 90% ethyl alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.
   * B73 ------ Recording model only
   * B86 ------ Not used in 2 head model.

Cleaning

Cleaning of Video Head

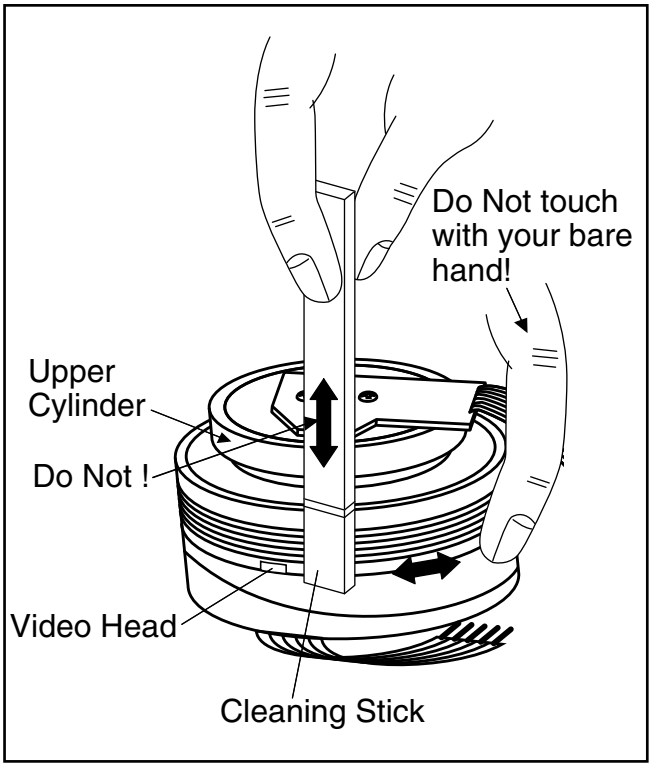
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% ethyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of ACE Head

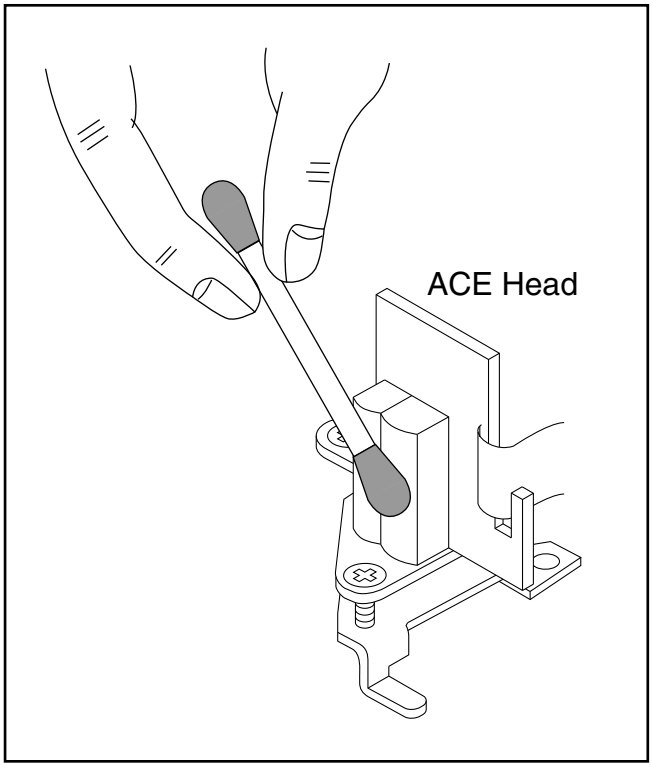
Clean the head with a cotton swab.

Procedure

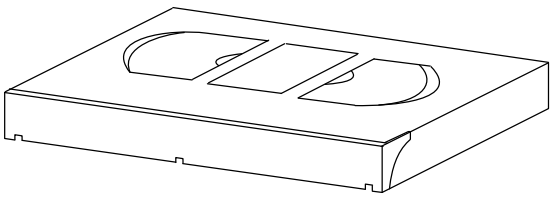
1. Remove the top cabinet.
2. Dip the cotton swab in 90% ethyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

Notes:

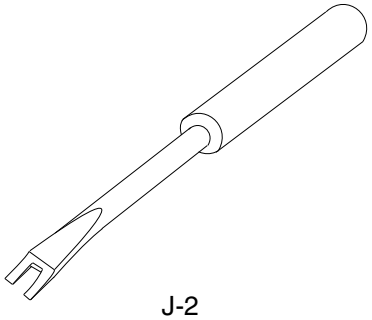
1. Avoid cleaning the ACE Head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



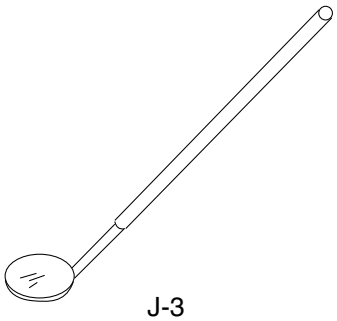
SERVICE FIXTURE AND TOOLS



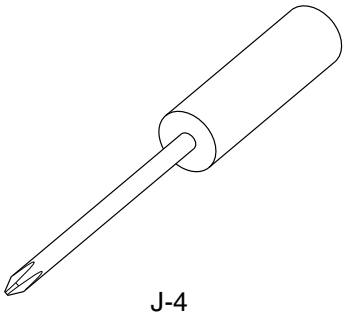
J-1-1, J-1-2



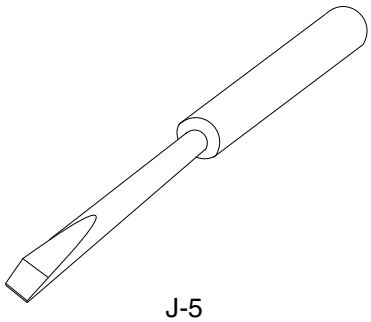
J-2



J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL6A	Head Adjustment of ACE Head
J-1-2	Alignment Tape	FL6N8 (2 Head model) FL6NS8 (4 Head model)	Azimuth and X Value Adjustment of ACE Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj. Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj. Screwdriver +	Available Locally	ACE Head Height
J-5	Flat Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

Top View

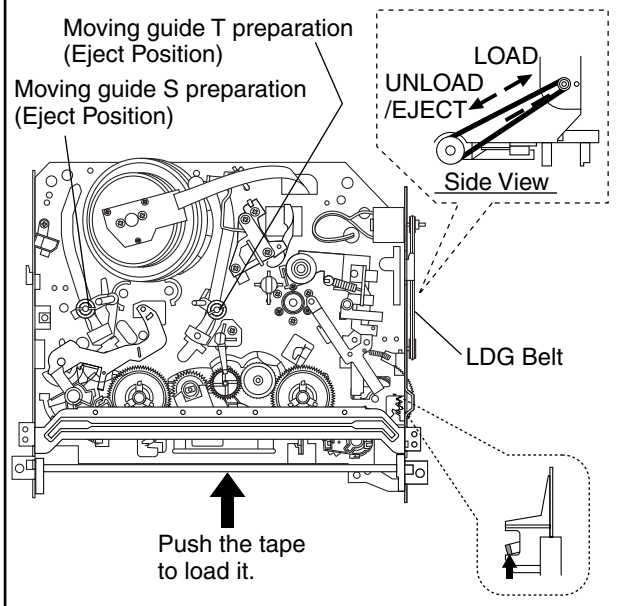


Fig. M1

Bottom View

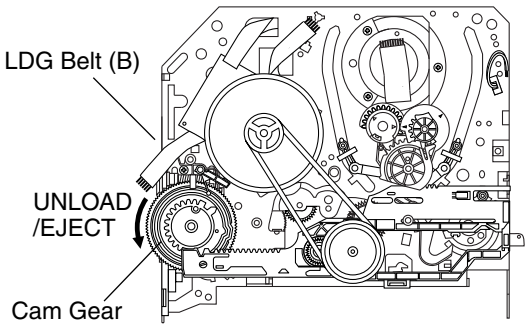


Fig. M2

1. Tape Interchangeability Alignment

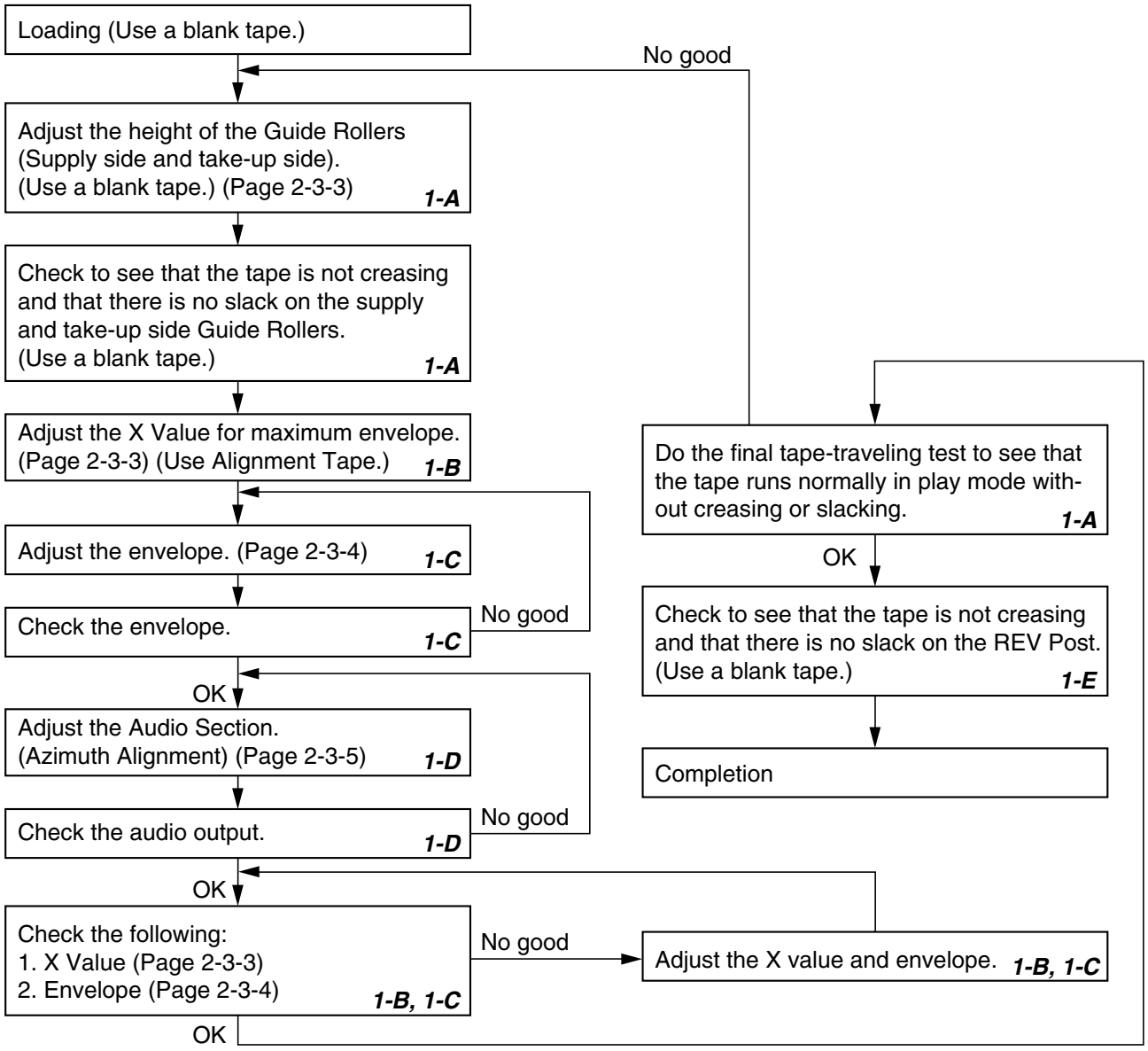
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape (FL6NS8)
Guide Roller Adj. Screwdriver
Flat Screwdriver (Purchase Locally)

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling


Loading (Use a blank tape.)
No good
Adjust the height of the Guide Rollers (Supply side and take-up side). (Use a blank tape.) (Page 2-3-3) 1-A
Check to see that the tape is not creasing and that there is no slack on the supply and take-up side Guide Rollers. (Use a blank tape.) 1-A
Adjust the X Value for maximum envelope. (Page 2-3-3) (Use Alignment Tape.) 1-B
Adjust the envelope. (Page 2-3-4) 1-C
Check the envelope. 1-C
No good
OK
Adjust the Audio Section. (Azimuth Alignment) (Page 2-3-5) 1-D
Check the audio output. 1-D
No good
OK
Check the following:
1. X Value (Page 2-3-3)
2. Envelope (Page 2-3-4) 1-B, 1-C
No good
Adjust the X value and envelope. 1-B, 1-C
OK
Do the final tape-traveling test to see that the tape runs normally in play mode without creasing or slacking. 1-A
OK
Check to see that the tape is not creasing and that there is no slack on the REV Post. (Use a blank tape.) 1-E
Completion

1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

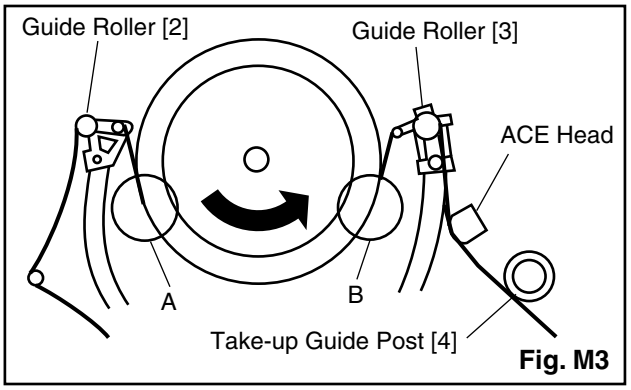


Fig. M3

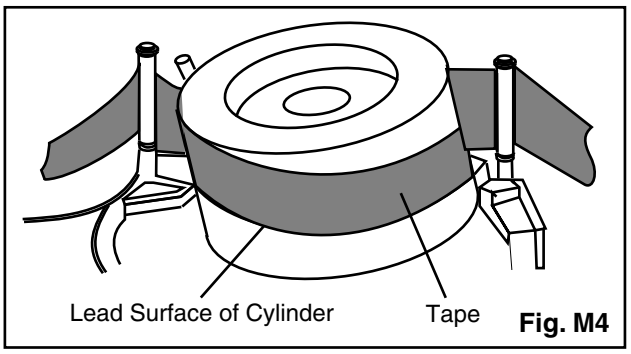


Fig. M4

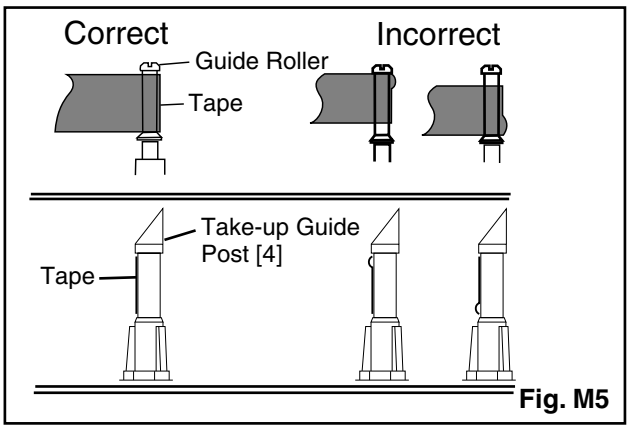


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. M6)

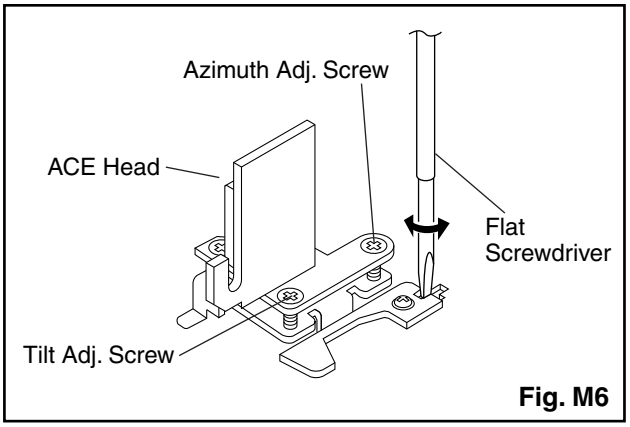


Fig. M6

1-B. X Value Alignment

Purpose:

To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

Symptom of Misalignment:

If the Horizontal Position of the ACE Head is not properly aligned, maximum PB FM envelope cannot be obtained at the preset position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP503 (CTL) on the BOARD POWER. Use TP504 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL6NS8) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing [PROGRAM ∧] button and then [▷] (VCR) button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the Flat Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)

5. To shift the CTL waveform, press [PROGRAM ∧] or [PROGRAM ∨] button. Then make sure that the maximum output position of PB FM envelope signal becomes within ±2ms from preset position.

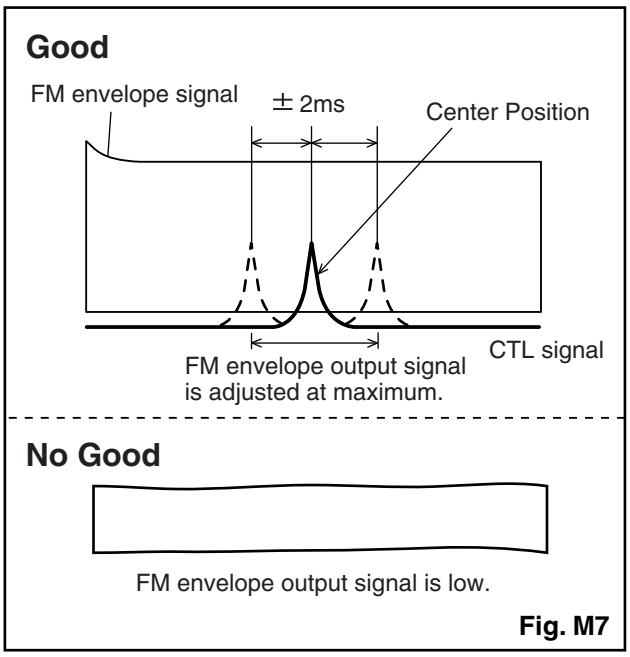


Fig. M7

6. Set the Tracking Control Circuit to the preset position by pressing [PROGRAM ∧] button and then [▷] (VCR) button on the unit.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture, adjust the Guide Rollers so that the PB FM envelope becomes as flat as possible.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) on the BOARD POWER. Use TP504 (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL6NS8). Set the Tracking Control Circuit to the preset position by pressing [PROGRAM ∧] button and then [▷] (VCR) button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M10.
4. If the envelope is as shown in Fig. M9, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M10.
5. When Guide Rollers [2] and [3] (Refer to Fig. M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M10.

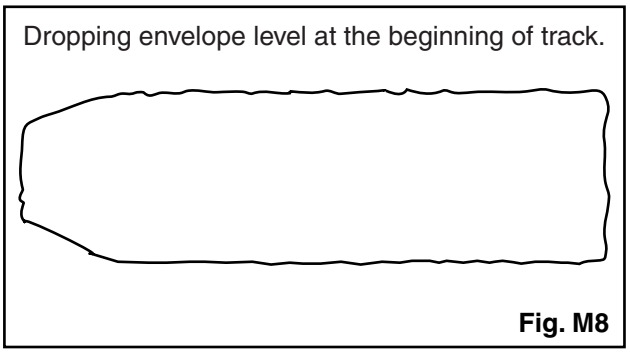


Fig. M8

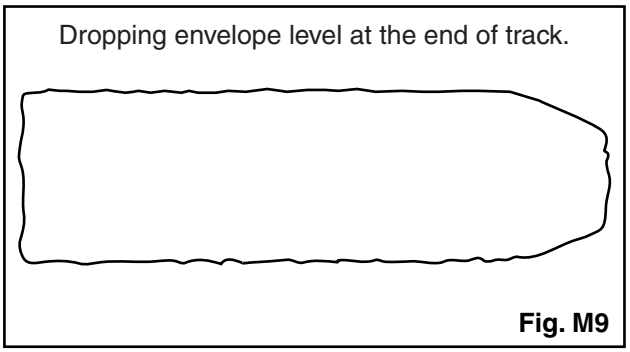


Fig. M9

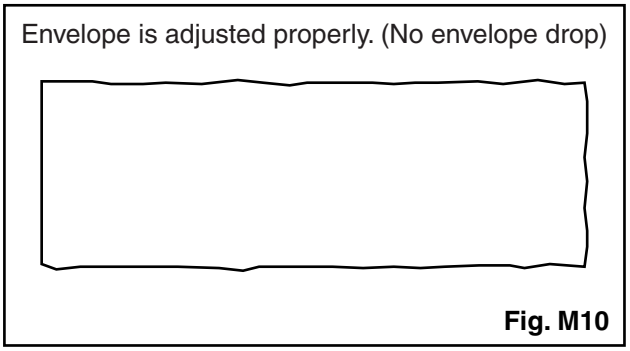


Fig. M10

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the [PROGRAM ∧] or [PROGRAM ∨] buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the [PROGRAM ∧] button on the unit to achieve 1/2 level of envelope should match the number of pushes of the [PROGRAM ∨] button on the unit from center. If required, redo the “X Value Alignment.”

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL6NS8) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Note: Upon completion of the adjustment of Azimuth Adj. Screw, check the X Value by pushing the [PROGRAM ∧] or [PROGRAM ∨] buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the [PROGRAM ∧] button on the unit to achieve 1/2 level of envelope should match the number of pushes of the [PROGRAM ∨] button on the unit from center. If required, redo the "X Value Alignment."

1-E. Checking and Alignment of Tape Path during reversing

Purpose:

To make sure that the tape path is well stabilized during reversing.

Symptom of Misalignment:

If the tape path is unstable during reversing, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Insert a blank cassette tape into the tray and set the unit to REV. Then confirm if the tape has been curled up or bent at the Take-up Guide Post[4] or REV Post[5]. (Refer to Fig. M11 and M12.)
2. When the tape has been curled up or bent, turn the alignment screw to adjust the height of REV Post. (Refer to Fig. M11 and M13.)

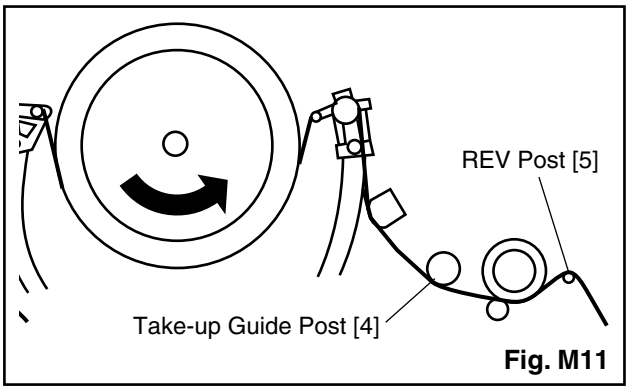


Fig. M11

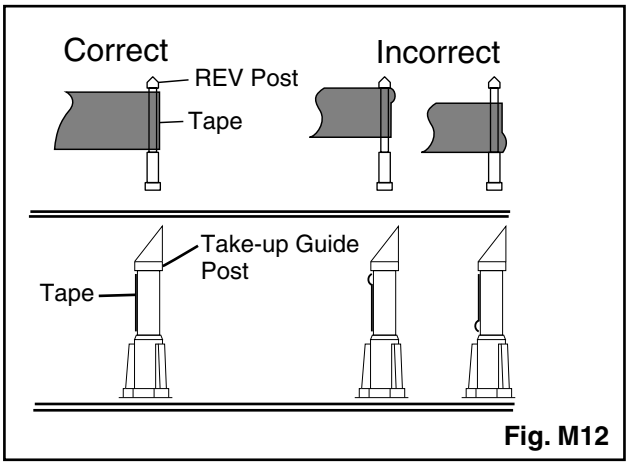


Fig. M12

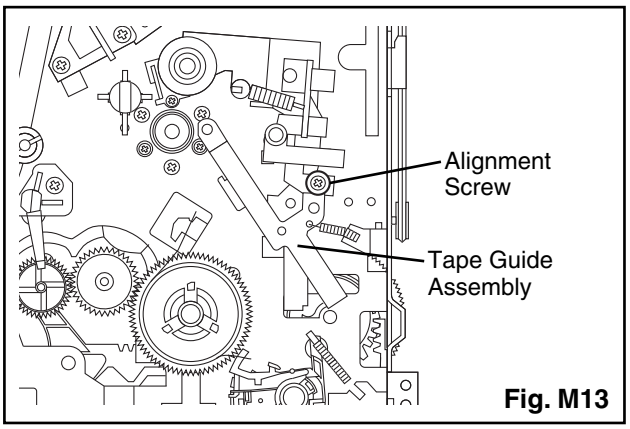


Fig. M13

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [44] and [45] in Fig. DM1H on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3H	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4H		
[3]	[2]	Slider (SP)	T	DM5H	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5H	*(L-2)	
[5]	[4]	Lock Lever	T	DM5H	*(L-3), *(P-1)	
[6]	[2]	Cassette Plate	T	DM5H		
[7]	[7]	Cylinder Assembly	T	DM1H, DM6H	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1H, DM7H	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	ACE Head Assembly	T	DM1H, DM7H	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1H, DM8H-1	*(P-2)	
[11]	[10]	C Door Opener	T	DM1H, DM8H-1	(S-4A), *(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1H, DM8H-1, DM8H-2	*(P-3)	
[13]	[12]	Pinch Arm (A) Assembly	T	DM1H, DM8H-1, DM8H-2		
[14]	[14]	FE Head	T	DM1H, DM9H	(S-5)	
[15]	[15]	Prism	T	DM1H, DM9H	(S-6)	
[16]	[2]	Slider Shaft	T	DM10H	*(L-5)	
[17]	[16]	C Drive Lever (SP)	T	DM10H		
[18]	[16]	C Drive Lever (TU)	T	DM10H	(S-7), *(P-4)	
[19]	[19]	Capstan Motor	B	DM2H, DM11H	3(S-8), Cap Belt	
[20]	[20]	Clutch Assembly (HI)	B	DM2H, DM12H	(C-1)	
[21]	[20]	Center Gear	B	DM12H		
*[22]	[22]	F Brake Assembly (HI)	B	DM2H, DM12H	*(L-6)	
[23]	[22]	Worm Holder	B	DM2H, DM13H-1	(S-9), *(L-7), *(L-8)	
[24]	[22]	Pulley Assembly (HI)	B	DM2H, DM13H-1		
[25]	[25]	Mode Gear (LM)	B	DM2H, DM13H-1	(C-2)	
[26]	[20],[25]	Mode Lever (HI)	B	DM2H, DM13H-1, DM13H-2	(C-3)	
[27]	[22],[23], [26]	Cam Gear (A) (HI)	B	DM2H, DM13H-1, DM13H-2	(C-4)	(+)Refer to Alignment Sec.Page 2-5-1
[28]	[26]	TR Gear C	B	DM2H, DM13H-1	(C-5)	
[29]	[28]	TR Gear Spring	B	DM13H-1		
[30]	[29]	TR Gear A/B	B	DM13H-1		
[31]	[31]	FF Arm (HI)	B	DM1H, DM14H		
[32]	[26]	Idler Assembly (HI)	B	DM1H, DM14H	*(L-9)	
[33]	[26]	BT Arm	B	DM2H, DM14H	*(P-5)	

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[34]	[26]	Loading Arm (SP) Assembly	B	DM2H, DM14H		(+)Refer to Alignment Sec.Page 2-5-1
[35]	[34]	Loading Arm (TU) Assembly	B	DM2H, DM14H		(+)Refer to Alignment Sec.Page 2-5-1
[36]	[16],[26]	M Brake (TU) Assembly (HI)	T	DM1H, DM15H		
[37]	[2],[26]	M Brake (SP) Assembly (HI)	T	DM1H, DM15H	*(P-6)	
[38]	[37]	Tension Lever Assembly	T	DM1H, DM15H		
[39]	[38]	T Lever Holder	T	DM15H	*(L-10)	
[40]	[40]	M Gear (HI)	T	DM1H, DM15H	(C-6)	
[41]	[15],[40]	Sensor Gear (HI)	T	DM1H, DM15H	(C-7)	
[42]	[36],[40]	Reel T	T	DM1H, DM15H		
[43]	[38]	Reel S	T	DM1H, DM15H		
[44]	[34],[38]	Moving Guide S Preparation	T	DM1H, DM16H	(S-11), Slide Plate	
[45]	[35]	Moving Guide T Preparation	T	DM1H, DM16H		
[46]	[19]	TG Post Assembly	T	DM1H, DM16H	*(L-11)	
[47]	[27]	Rack Assembly	R	DM17H		(+)Refer to Alignment Sec.Page 2-5-1
[48]	[47]	F Door Opener	R	DM17H		
[49]	[49]	Cleaner Assembly	T	DM1H, DM6H		
[50]	[49]	CL Post	T	DM6H	*(L-12)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

.

*** [22] F Brake Assembly (HI) is not used in 2 head model.**

Top View

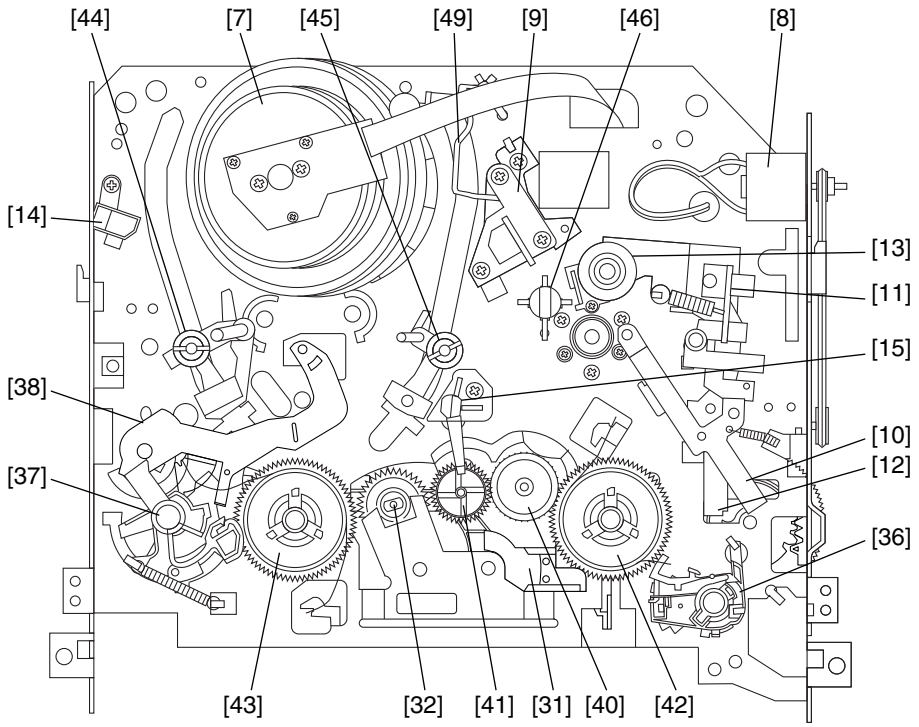


Fig. DM1H

Bottom View

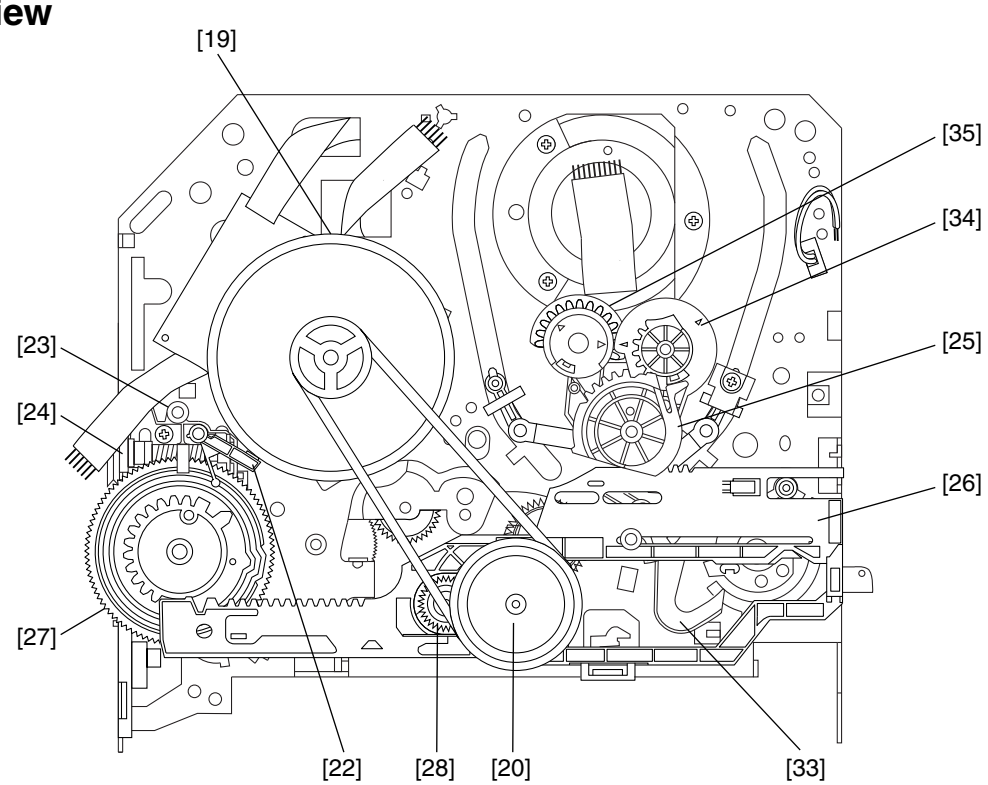


Fig. DM2H

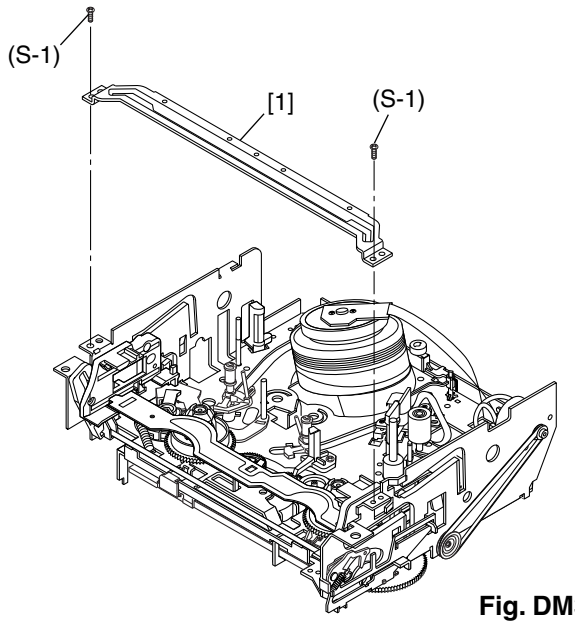
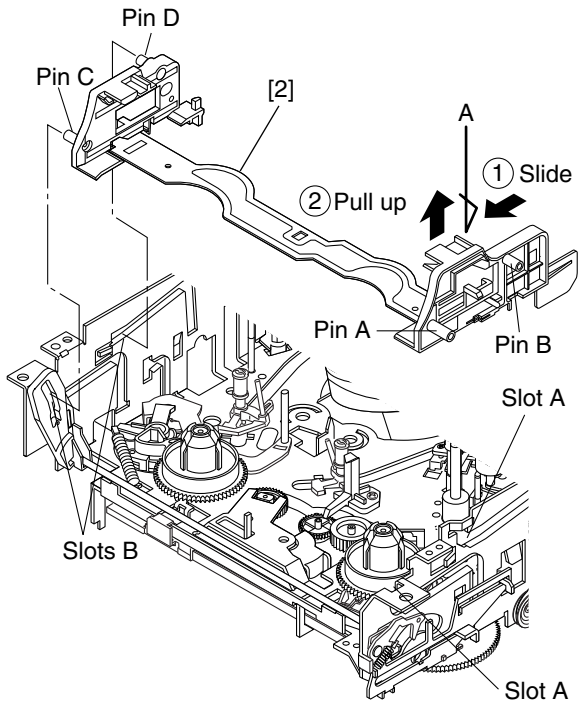


Fig. DM3H



First, while pushing the locking tab as shown in the right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.

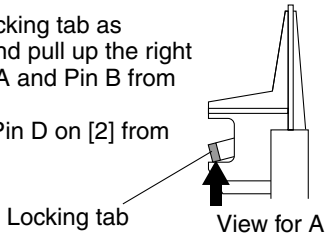
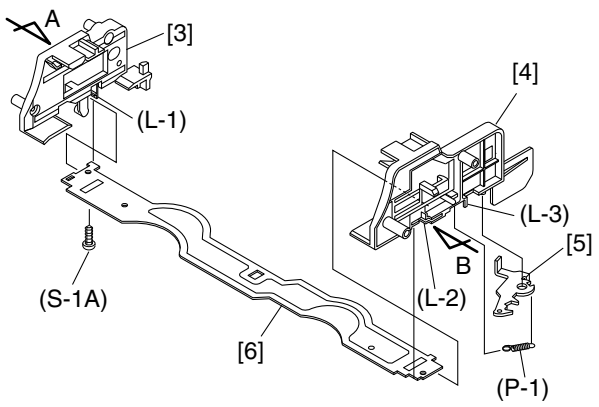
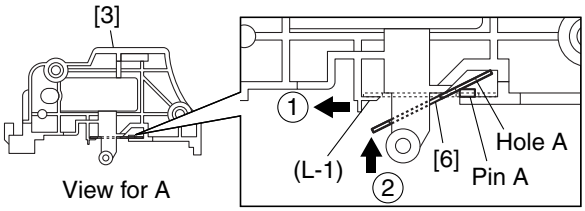


Fig. DM4H



Installation of [3] and [6]

First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in the direction of the arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.



Installation of [4] and [6]

Install [6] in [4] while pulling (L-2) in the direction of the arrow. After installing [6] in [4], confirm that pin B of [4] enters hole B of [6] properly.

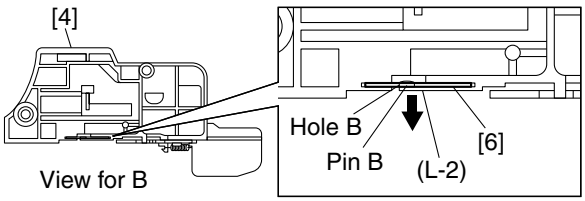


Fig. DM5H

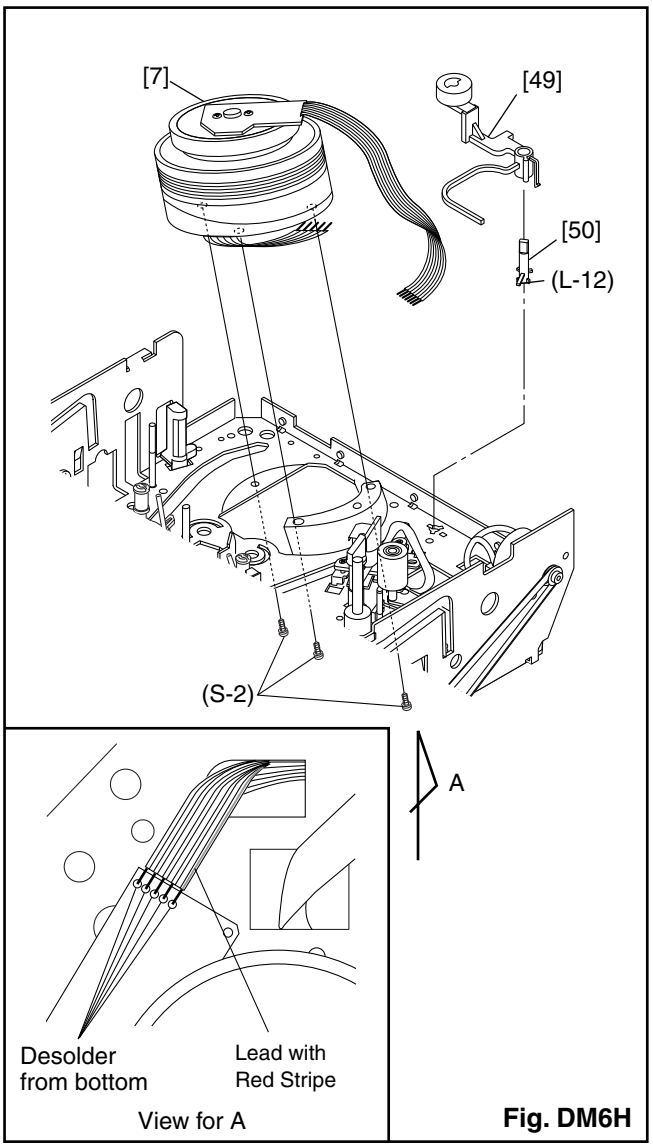


Fig. DM6H

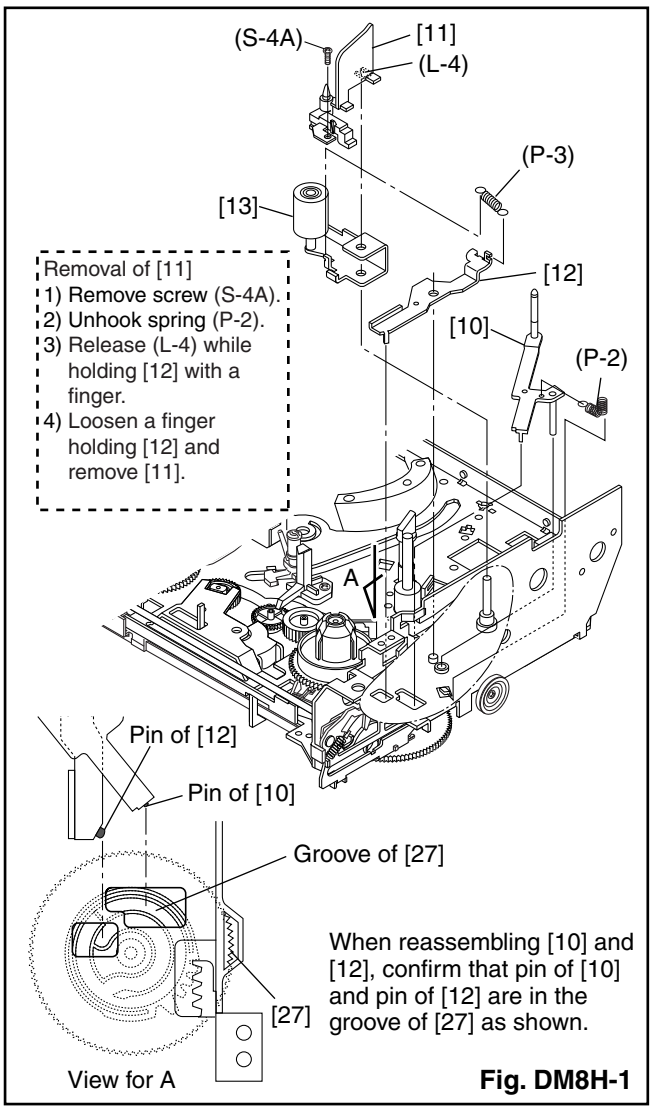


Fig. DM8H-1

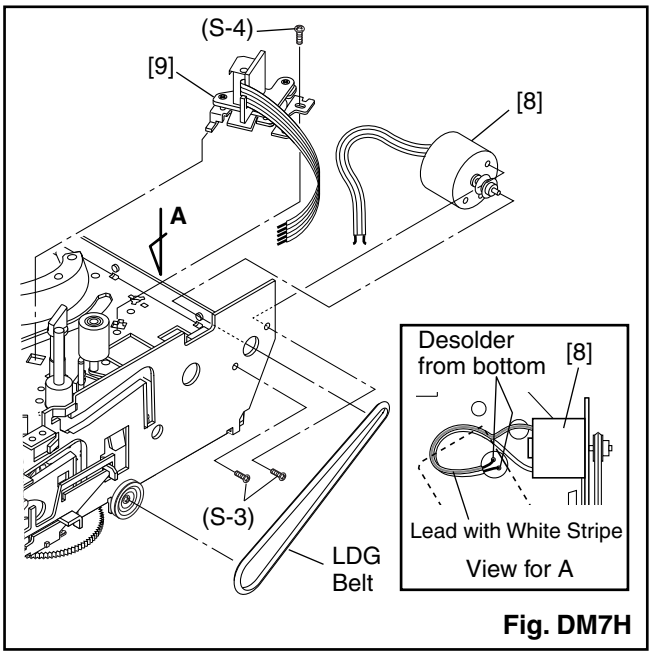


Fig. DM7H

Installation of [13] and [12]

Hook spring (P-3) up to [12] and [13], then install them to the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.)

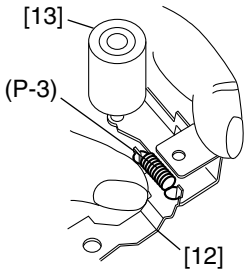


Fig. A

Install pin of [12] in groove of [27]. (Refer to Fig. B.)

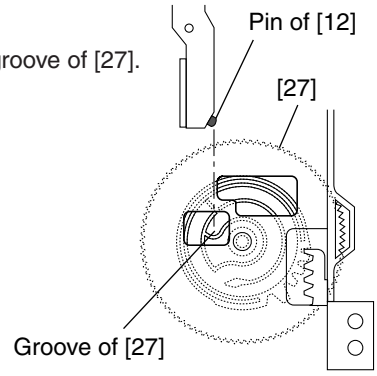


Fig. B (Top view)

Press both [12] and [13] till the groove of chassis pin appears, and adjust [13] to the notch of chassis. Then turn [13] a little in the direction of the arrow while pressing [12]. (Refer to Fig. C.)

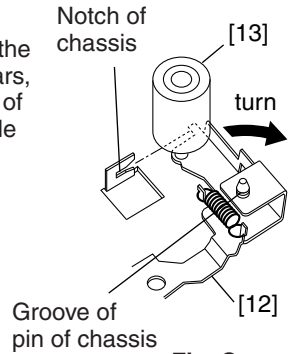


Fig. C

Install [11] and [10] while holding [12]. (Refer to Fig. DM8H-1.)

Fig. DM8H-2

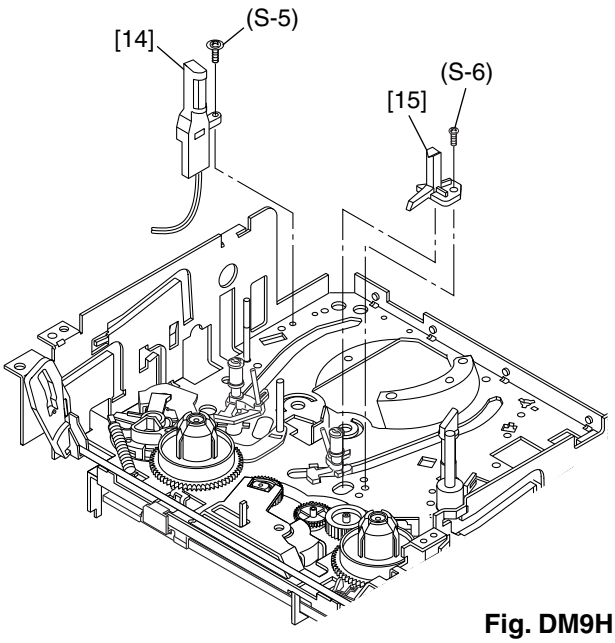


Fig. DM9H

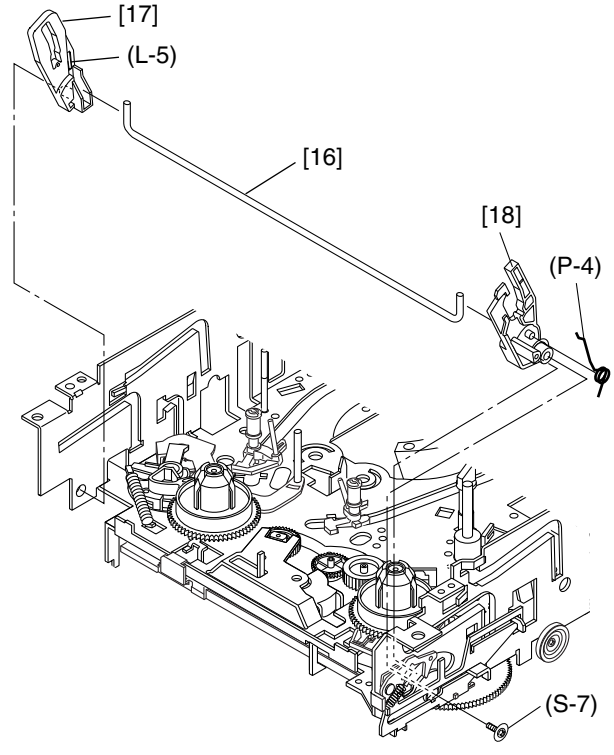
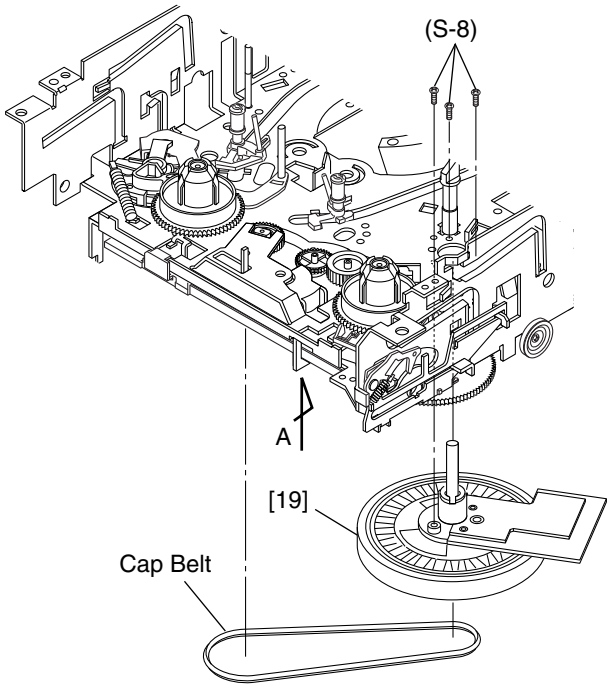
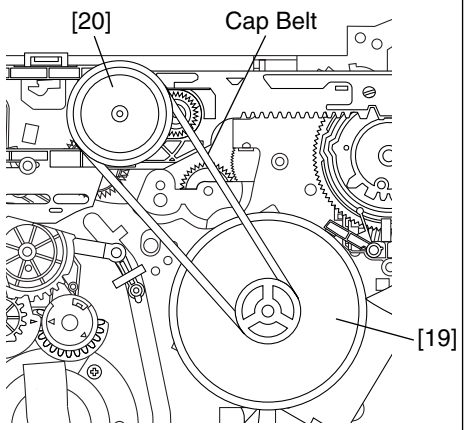


Fig. DM10H

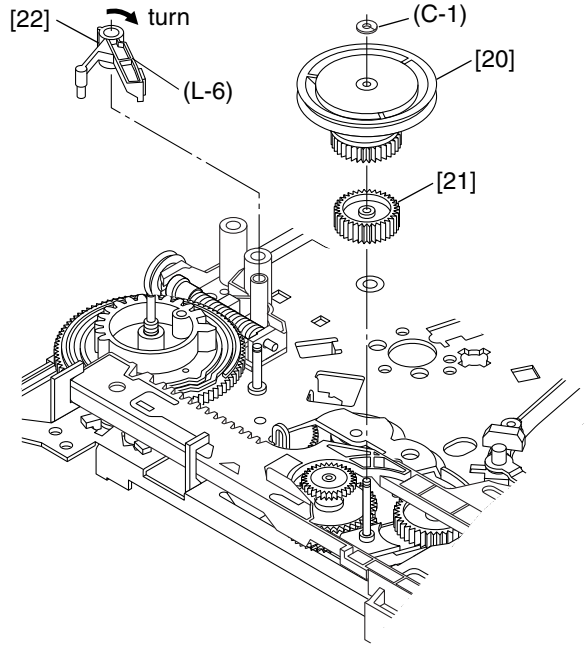


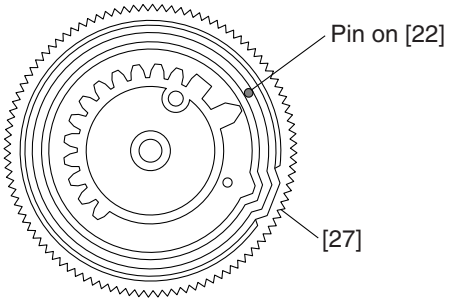
Installation position of Cap Belt



View for A

Fig. DM11H





Position of pin on [22]

Fig. DM12H

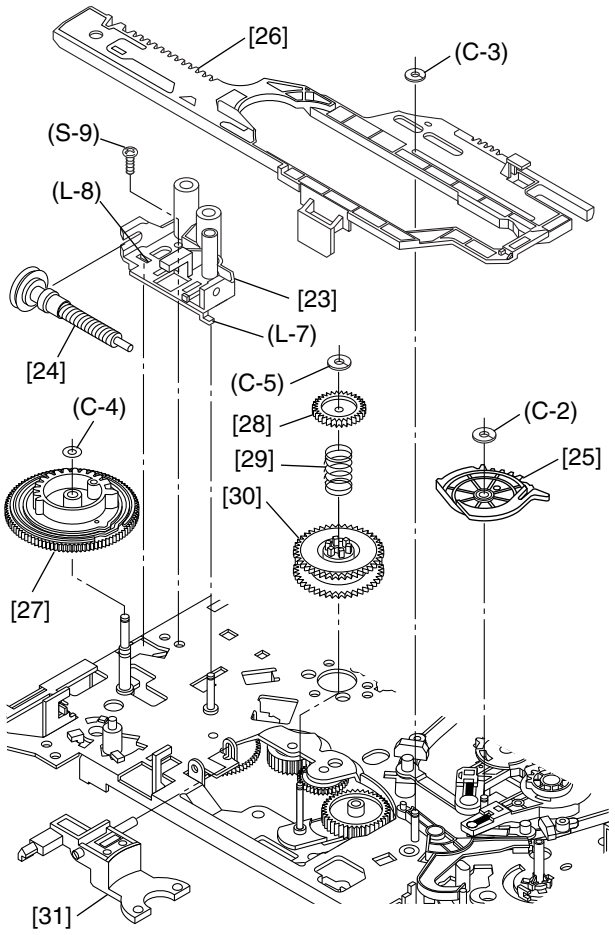
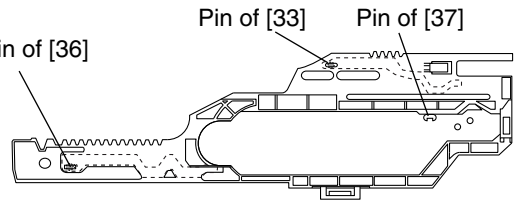
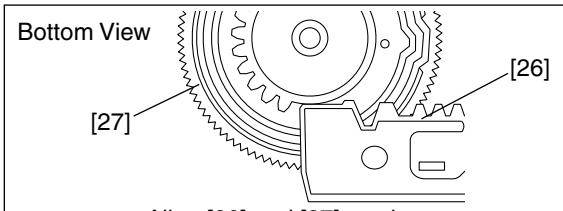


Fig. DM13H-1

Installation of [26]

Position of Mode Lever when installed





Align [26] and [27] as shown.

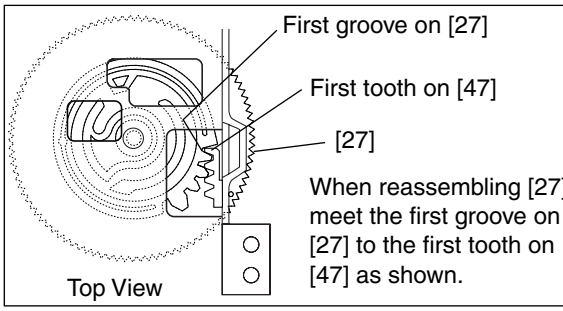

First groove on [27]
First tooth on [47]
[27]
When reassembling [27], meet the first groove on [27] to the first tooth on [47] as shown.
Top View

Fig. DM13H-2

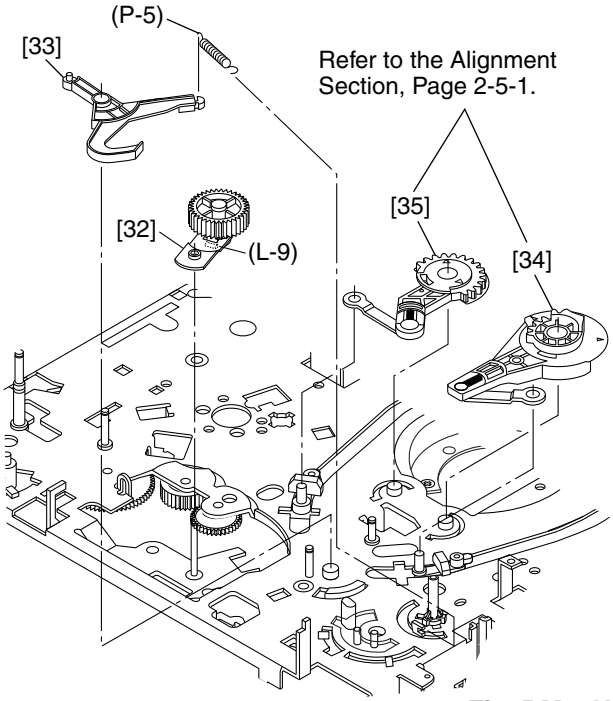


Fig. DM14H

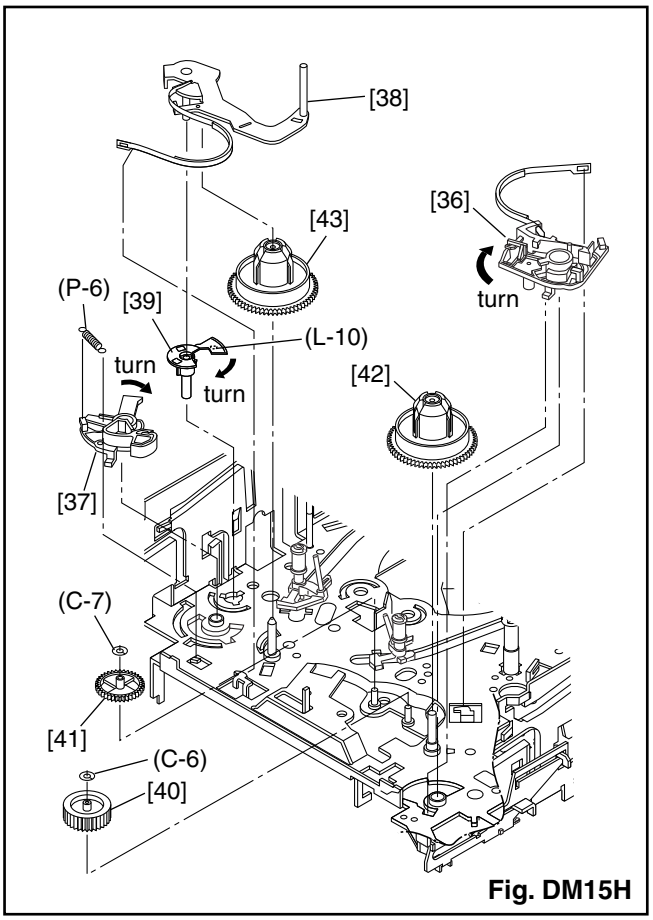


Fig. DM15H

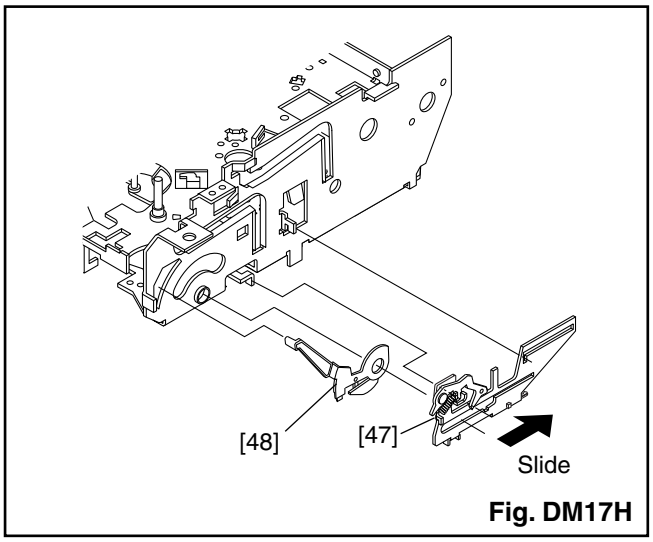


Fig. DM17H

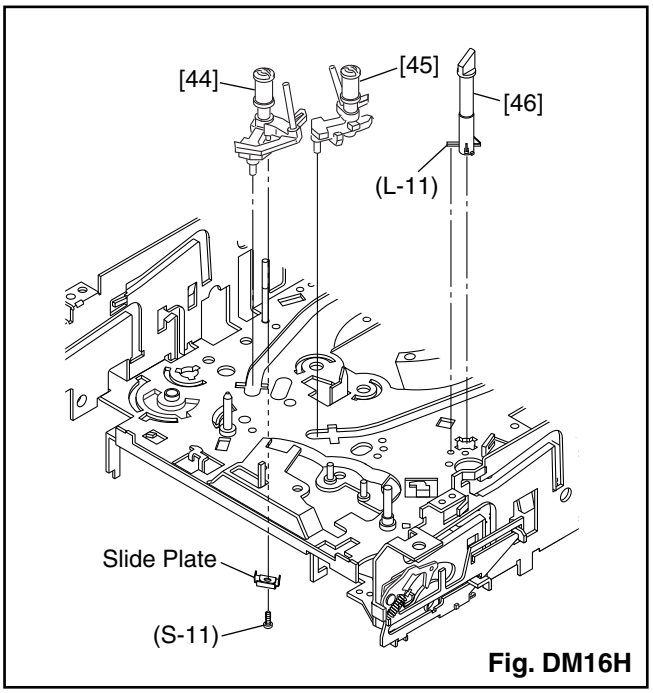


Fig. DM16H

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

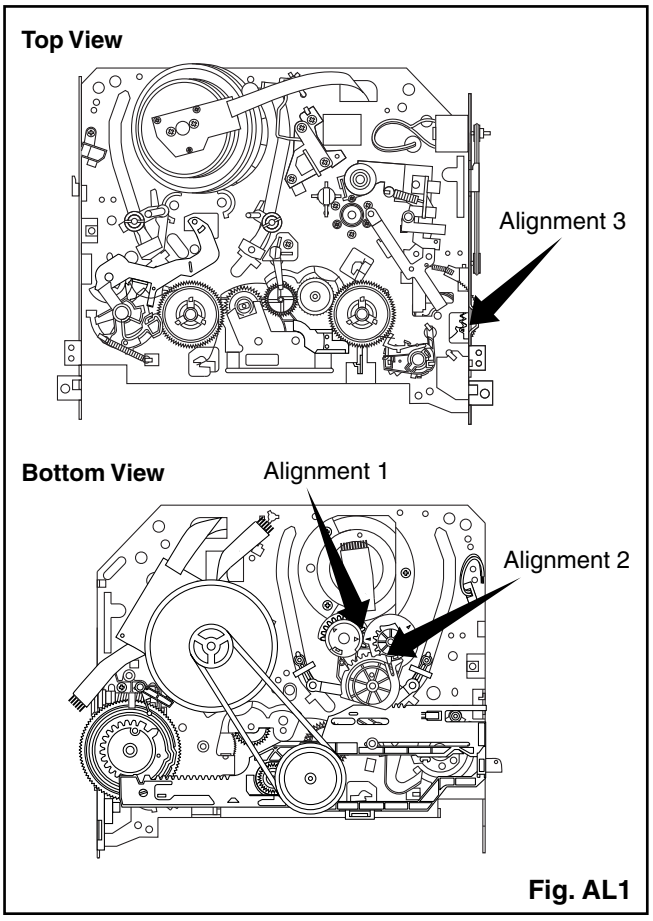


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

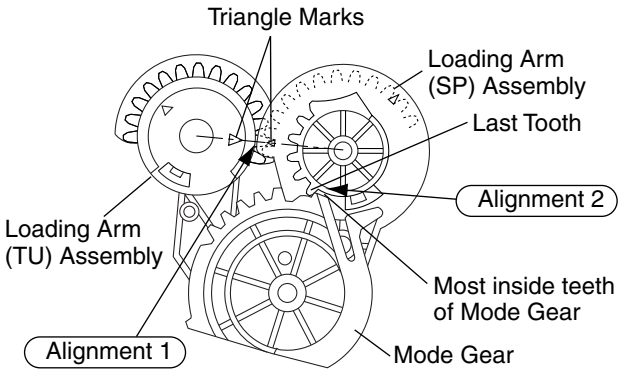


Fig. AL2

Alignment 3

Cam Gear (A) (HI), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) (HI) as shown in Fig. AL3.

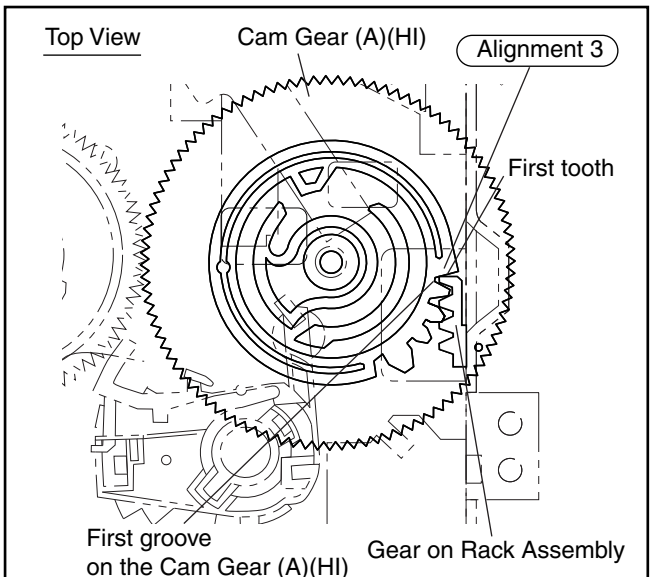
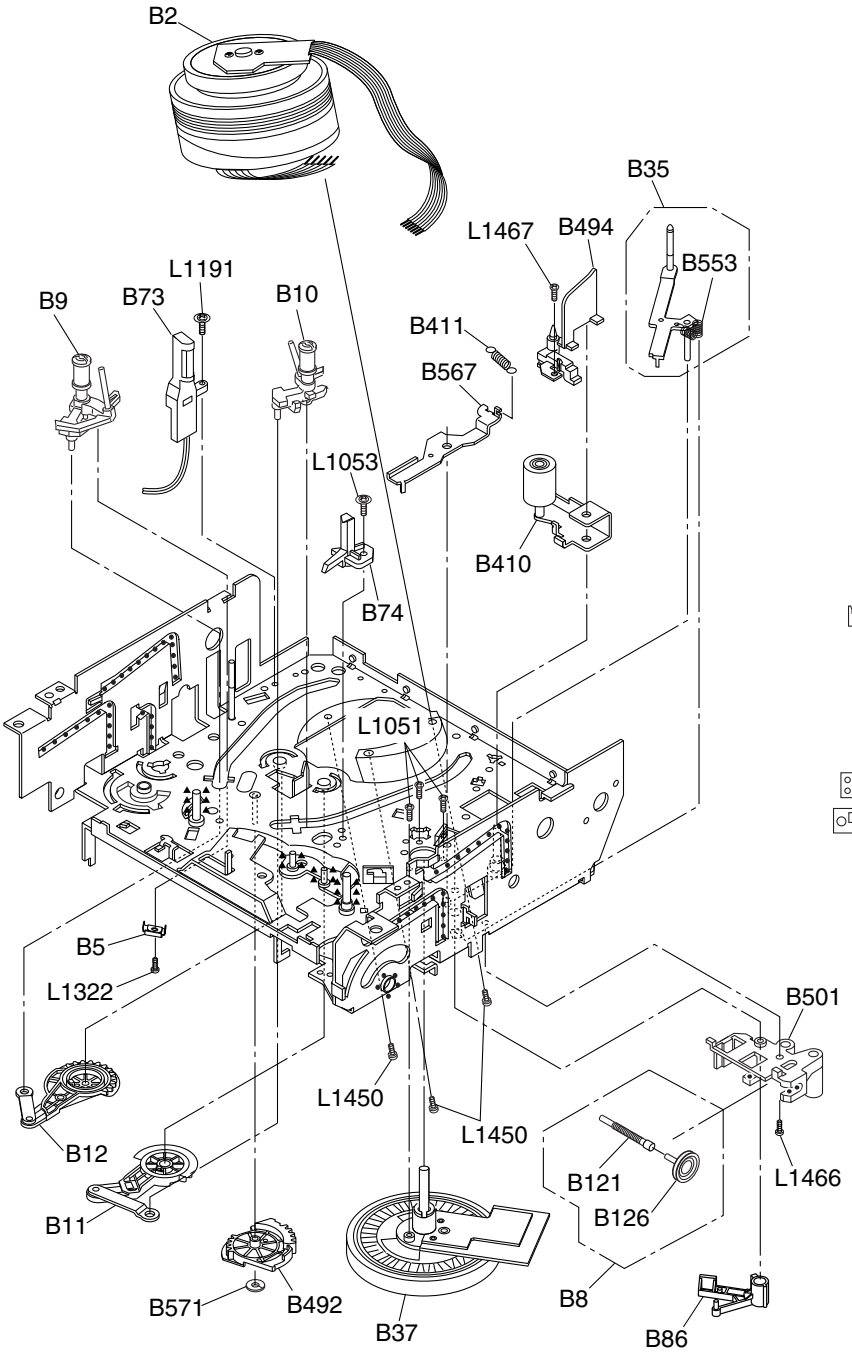


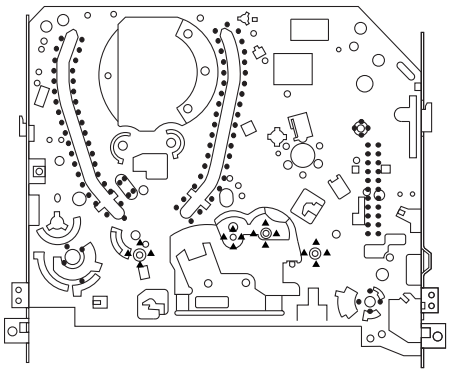
Fig. AL3

DECK EXPLODED VIEWS

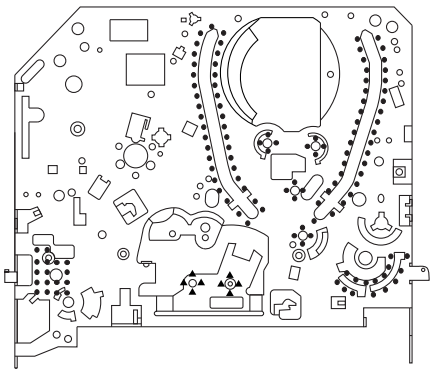
Deck Mechanism View 1

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150





Chassis Assembly
Top View (Lubricating Point)

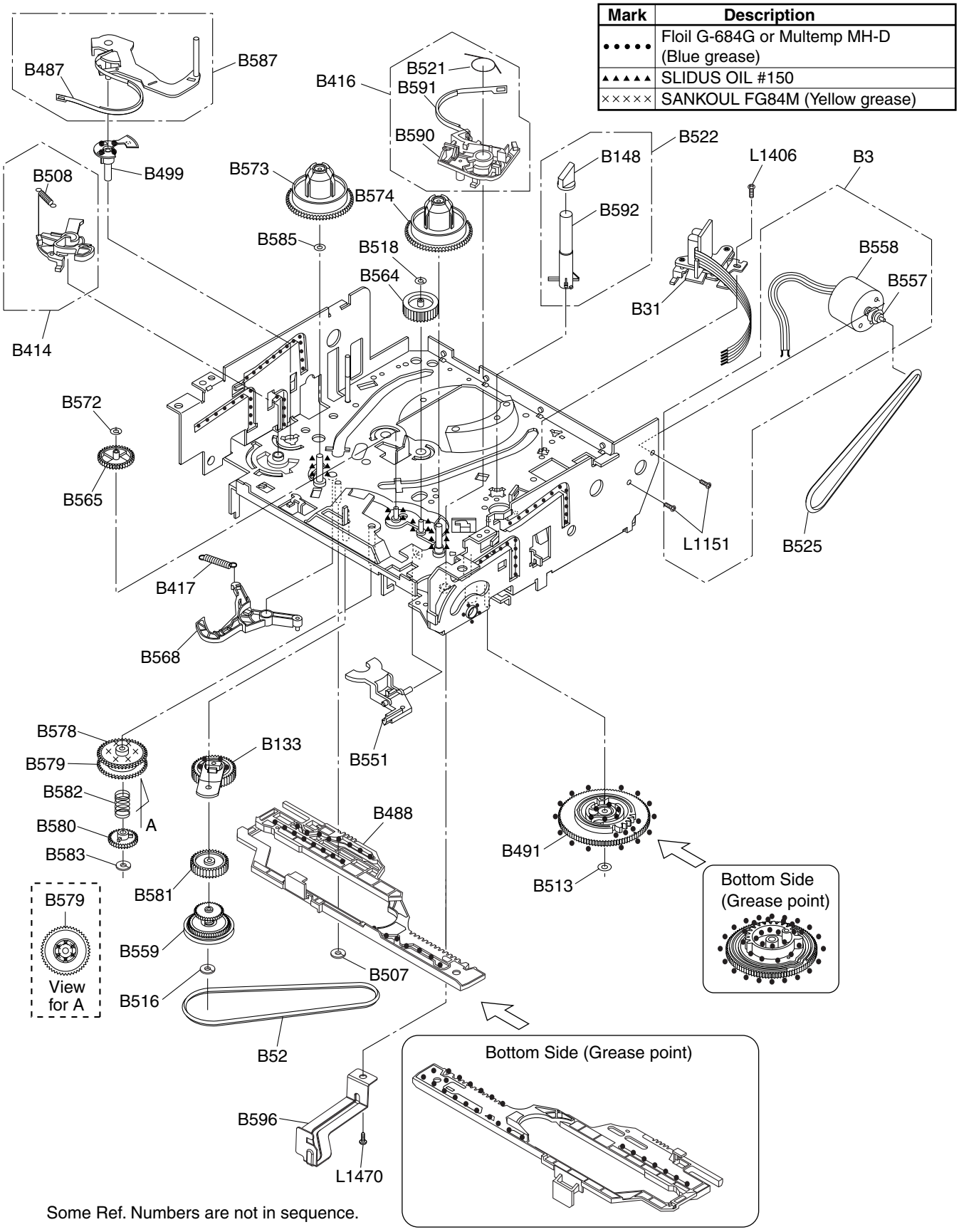


Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

Deck Mechanism View 2

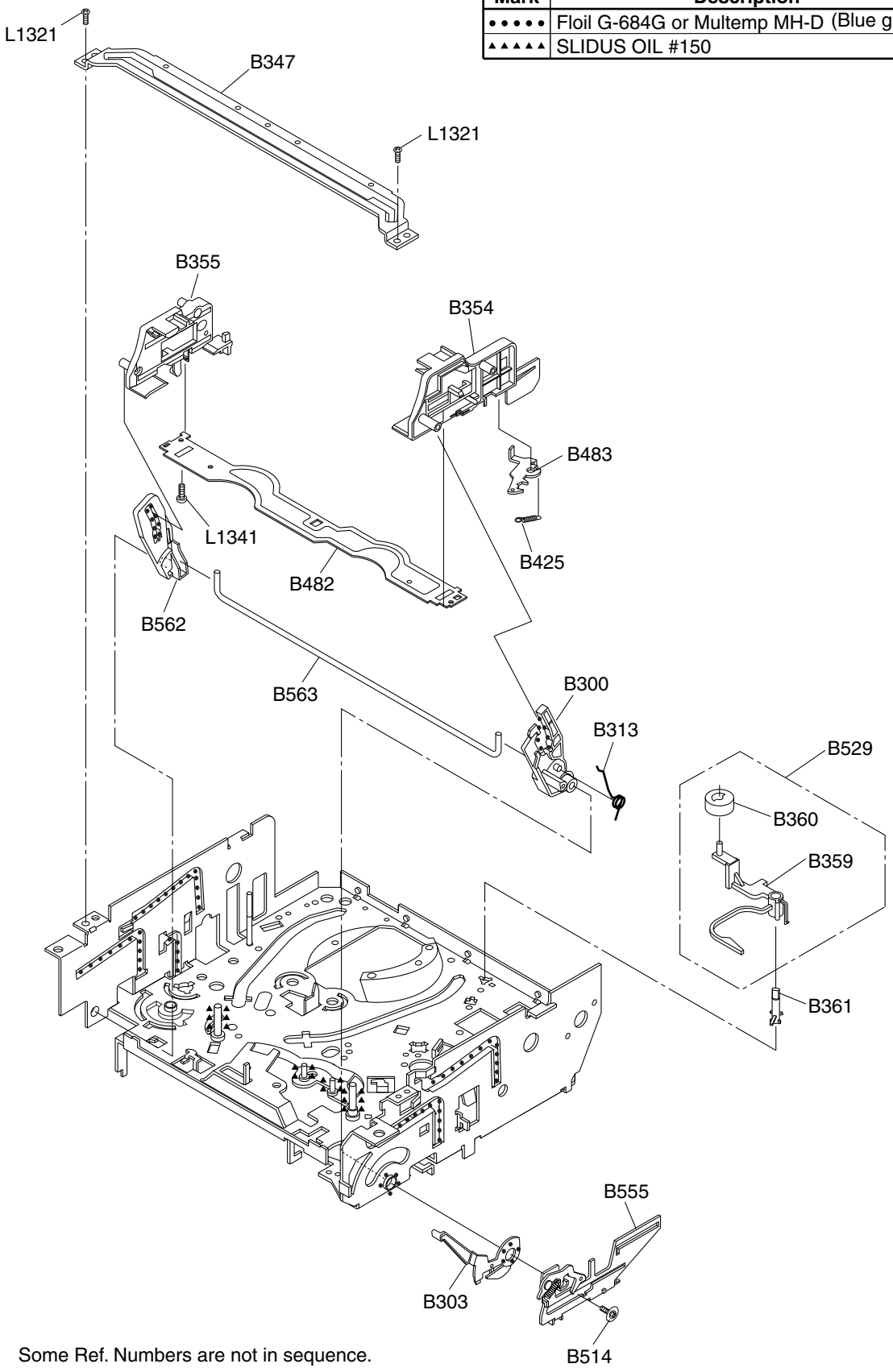
Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150
×××××	SANKOUL FG84M (Yellow grease)



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

DECK PARTS LIST

⚠	Location No.	TSB P/N	Reference No.	Description
	B2	P000468620	1VSA14761	CYLINDER ASSEMBLY(N236C) MK14 PAL 6HD
	B3	P000468180	1VSA12912	LOADING MOTOR ASSEMBLY MK14
	B5	P000467990	0VM416429	SLIDE PLATE MK12.5
	B8	P000483640	0VSA13501	PULLEY ASSEMBLY(HI) MK12
	B9	P000468130	1VSA12887	MOVING GUIDE S P.P MK12.5
	B10	P000468120	1VSA12886	MOVING GUIDE T P.P MK12.5
	B11	P000468100	1VSA12880	LOADING ARM(TU) ASSEMBLY MK12
	B12	P000468090	1VSA12879	LOADING ARM(SP) ASSEMBLY MK12
	B31	P000468140	1VSA12888	AC HEAD ASSEMBLY MK12.5
	B35	P000468150	1VSA12889	TAPE GUIDE ARM ASSEMBLY MK12.5
	B37	P000468630	1VSA14833	CAPSTAN MOTOR HI(N9688) 288/VCZC1301
	B52	P000467850	0VM411138	CAP BELT MK10
	B73	P000468190	DHVEC01AL007	FE HEAD(MK12) HVFHP0047A
	B74	P000467540	0VM202870	PRISM MK10
	B86	P000468010	0VSA13447	F BRAKE ASSEMBLY(HI) MK12
	B121	P000467900	0VM414091	WORM MK12
	B126	P000467940	0VM414330B	PULLEY MK12
	B133	P000468170	1VSA12903	IDLER ASSEMBLY(HI) MK12
	B148	P000467780	0VM407664C	TG CAP MK6
	B300	P000467610	0VM203773	C DRIVE LEVER(TU) MK12
	B303	P000467570	0VM203751C	F DOOR OPENER MK12
	B313	P000467920	0VM414145	C DRIVE SPRING MK12
	B347	P000467650	0VM304920	GUIDE HOLDER A MK10
	B354	P000467500	0VM101172F	SLIDER(TU) MK12
	B355	P000480670	0VM101182Q	SLIDER(SP) MK12
	B359	P000467630	0VM304413	CLEANER LEVER MK10
	B360	P000467800	0VM410032C	CLEANER ROLLER MK9
	B361	P000467840	0VM411114	CL POST MK10
	B410	P000480760	1VSA15385	PINCH ARM(A) ASSEMBLY MK12
	B411	P000467950	0VM414644	PINCH SPRING MK12
	B414	P000468030	0VSA13655	M BRAKE(SP) ASSEMBLY(HI) MK12
	B416		0VSA13449	M BRAKE(TU) ASSEMBLY(HI) MK12
	B417	P000480690	0VM414221H	TENSION SPG(3002645) MK12.5
	B425	P000467830	0VM411110	LOCK LEVER SPRING MK10
	B482	P000468040	1VM220271	CASSETTE PLATE
	B483	P000467910	0VM414095	LOCK LEVER MK12
	B487	P000468050	1VM320582	BAND BRAKE(SP) MK12.5
	B488	P000480680	0VM101352W	MODE LEVER(HI) MK12.5
	B491	P000467510	0VM101176G	CAM GEAR(A)(HI) MK12
	B492	P000467620	0VM204236	MODE GEAR(LM) MK12
	B494	P000467670	0VM305719	C DOOR OPENER MK12
	B499	P000467700	0VM305729C	T LEVER HOLDER MK12
	B501	P000467590	0VM203767	WORM HOLDER MK12
	B507	P000467810	0VM410058	REEL WASHER MK9 5*2.1*0.5
	B508	P000467970	0VM414899	S BRAKE SPRING(HI) MK12
	B513	P000467770	0VM402629A	P.S.W F 6*2.55*0.5
	B514		0VM411535B	SCREW RACK MK14
	B516	P000467810	0VM410058	REEL WASHER MK9 5*2.1*0.5
	B518	P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B521	P000467980	0VM414943	REV BRAKE SPG(HI) MK12
	B522		0VSA11012	TG POST ASSEMBLY MK10
	B525	P000467880	0VM412804	LDG BELT MK11
	B529		0VSA11161	CLEANER ASSEMBLY MK10
	B551	P000467760	0VM306183	FF ARM(HI) MK12
	B553	P000467870	0VM412555	REV SPRING MK11
	B555	P000468070	1VSA11842	RACK ASSEMBLY MK14
	B557	P000483630	0VM403205A	MOTOR PULLEY U5
	B558	P000483820	MMDZB12MF003	LOADING MOTOR RF-500TB-12560
	B559	P000468020	0VSA13450	CLUTCH ASSEMBLY(HI) MK12
	B562	P000467600	0VM203772	C DRIVE LEVER(SP) MK12
	B563	P000467740	0VM305762B	SLIDER SHAFT MK12
	B564	P000467720	0VM305755	M GEAR(HI) MK12
	B565	P000467730	0VM305756	SENSOR GEAR(HI) MK12
	B567	P000489970	1VSA12890B	PINCH ARM(B) ASSEMBLY MK12.5
	B568	P000467690	0VM305728	BT ARM MK12
	B571	P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B572	P000467790	0VM408485A	P.S.W CUT 1.6X4.0X0.5T
	B573	P000467560	0VM203436	REEL S MK11
	B574	P000467550	0VM202872C	REEL T MK10
	B578	P000467640	0VM304440	TR GEAR A MK10
	B579	P000467750	0VM305900	TR GEAR B MK12
	B580	P000467710	0VM305743A	TR GEAR C MK12
	B581	P000467660	0VM305081	CENTER GEAR MK11
	B582	P000467860	0VM411187C	TR GEAR SPRING MK10
	B583	P000467960	0VM414741	CAM WASHER MK12
	B585	P000467890	0VM413663	PSW(317505) MK11
	B587	P000468080	1VSA12878	TENSION LEVER ASSEMBLY MK12
	B590	P000467580	0VM203752E	BRAKE ARM(TU) MK12
	B591	P000467680	0VM305724C	BAND BRAKE(TU) MK12
	B592	P000467820	0VM411108E	TG POST MK10
	B596		1VM424704	HOLDER ML SHARP HI-SPEED
	L1051		GPJB9060	SCREW B-TIGHT M2.6X6 PAN HEAD+
	L1053		GCJS9080	SCREW S-TIGHT M2.6X8 WASHER HEAD+
	L1151		CPJ39040	SCREW SEMS M2.6X4 PAN HEAD+
	L1191		GCJS9080	SCREW S-TIGHT M2.6X8 WASHER HEAD+
	L1321		GBJS3060	SCREW S-TIGHT M3X6 BIND HEAD+
	L1322		GBJBY040	SCREW B-TIGHT M2.3X4 BIND HEAD+
	L1341		GPJP2060	SCREW P-TIGHT M2X6 PAN HEAD+
	L1406		0VM410964A	AC HEAD SCREW MK14
	L1450		CPJ39050	SCREW SEMS M2.6X5 PAN HEAD+
	L1466		GBJS9060	SCREW S-TIGHT M2.6X6 BIND HEAD+
	L1467		SCJ39050	SCREW M2.6X5 WASHER HEAD+
	L1470		GBJS9040	SCREW S-TIGHT M2.6X4 BIND HEAD+

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